MILES CITY FIELD OFFICE

FIRE MANAGEMENT PLAN

United States Department of the Interior
Bureau of Land Management
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Prepared by: _____

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TABLE OF CONTENTS

MAPS

TABLES

ACRONYMS

ACEC	Areas of Environmental Concern
AMR	Appropriate Management Response
ARA	Aircraft Rental Agreement
ATV	All Terrain Vehicle
AUM	Animal Unit-Month
AWP	Annual Work Plan
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
CFR	Code of Federal Regulations
CMR	Charles M. Russell
CNF	Custer National Forest
CPR	Cardiopulmonary Resuscitation
CWN	Call When Needed
dba	Decibel-a Weighted
DBH	Diameter at Breast Height
DM	Departmental Manual
DNRC	Department of Natural Resources and Conservation
DOI	Department of Interior
ESR	Emergency Stabilization and Rehabilitation
FBPS	Fire Behavior Predictions Systems
FIL	Fire Intensity Level
FLPMA	Federal Land Management and Policy Act of 1976
FM	Fuel Module
FMO	Fire Management Officer
FMP	Fire Management Plan
FMU	Fire Management Unit
FMZ	Fire Management Zone
FRCC	Fire Regime Condition Class
FWFMP	Federal Wildland Fire Management Policy
GIS	Geographical Information System
HFR	Historic Fire Regime
ICS	Incident Command System
IDIQ	Indefinite Delivery Indefinite Quantity
IIAA	Interagency Initial Attack Assessment
LAU	Lynx Assessment Unit
LUP	Land Use Plan
MCFO	Miles City Field Office
mdb	File Format
MEL	Most Efficient Level
MIS	Management Information System

MIST	Minimum Impact Suppression Tactics
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NFDRS	National Fire Danger Rating System
NFMAS	National Fire Management Analysis System
NFS	National Forest Service
NHPA	National Historic Prevention Act of 1966
NRCS	Natural Resource Conservation Service
NWCG	National Wildfire Coordinating Group
NWR	National Wildlife Refuge
NWS	National Weather Service
NYR	Normal Year Readiness
OHV	Off Highway Vehicle
PCHA	Personal Computer Historical Analysis
PFC	Proper Functioning Condition
PNVG	Potential Natural Vegetation Groups
RAMS	Risk Assessment and Mitigation Strategies Plan
RAWS	Remote Automated Weather System (Station)
RFA	Rural Fire Assistance
RIPS	Range Improvement Project System
RMP	Range Management Plan
ROD	Record of Decision
ROW	Right-of-Way
RPZ	Riparian Protection Zones
SDFO	South Dakota Field Office
SEAT	Single Engine Air Tanker
SHPO	State Historic Preservation Office
SMA	Special Management Area
SMZ	Stramside Management Zone
SRMA	Special Recreation Management Area
SSS	Special Status Species
UAM	Unit Aviation Manager
USC	United States Codes
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USDI	United States Department of Interior
VRM	Visual Resource Management
WFIP	Wildland Fire Implementation Plan
WFSA	Wildland Fire Situation Analysis
WFU	Wildland Fire Use
WSA	Wilderness Study Area
WUI	Wildland Urban Interface

I. INTRODUCTION

A. Purpose

This FMP identifies resource values and conditions pertaining to fire management on lands administered by the MCFO. This FMP recommends strategies for:

- Wildland Fire Suppression,
- Wildland Fire Use (WFU),
- Prescribed Fire,
- Non-Fire Fuels Treatment,
- Emergency Stabilization and Rehabilitation (ESR), and
- Community Assistance/Protection.

These strategies, which are addressed in detail in sections III and IV of this document, are in conformance with and will implement the decisions and direction within the Big Dry and Powder River Range Management Plans (RMPs).

The FMP has been developed through an interdisciplinary approach using resource management specialists, subject matter experts and cooperators in accordance with the framework and guidance provided by the Director of Fire and Aviation at the National Office. In addition, this FMP lays the foundation for planning, analyzing site specific projects and future collaborative efforts involving interagency partners and state and local cooperators.

National Direction for Fire Management Planning

This FMP has been prepared in accordance with the 1995 Federal Wildland Fire Management Policy (FWFMP) and the 2001 FWFMP Update [United States Department of Agriculture (USDA), United States Department of the Interior (USDI) 2001], directing all federal agencies managing burnable vegetation to develop and implement a FMP. This FMP also follows the interagency template that ensures FMPs prepared by the USDA and USDI have a consistent format and content.

B. Relationship to Environmental Compliance

The strategies described in this FMP are in conformance with decisions made in land use plans and from objectives defined in other planning documents. These documents include Big Dry Resource Area Management Plan Record of Decision (ROD) (April 1996) and Powder River Resource Management Plans ROD (March 1985), Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota and South Dakota ROD (August 1997), Fire/Fuels Management Plan Environmental Assessment/Plan Amendment for Montana and the Dakotas ROD (September 2003), Off Highway Vehicle Environmental Impact Statement and the Plan Amendment for Montana, North Dakota and South Dakota ROD (June 2003), Areas of Critical Environmental Concern

(ACEC) Decision Record and approved Amendment of the Billings Powder River and South Dakota RMPs (March 1999). The MCFO FMP meets regulatory compliance requirements with the National Environmental Policy Act (NEPA). Recommended strategies in this document do not make any further decisions. Prior to implementing fire management projects on-the-ground, additional environmental analysis and compliance with other federal and state regulatory requirements such as the National Historic Preservation Act and the Endangered Species Act, the Clean Water Act and the Clean Air Act will be required.

C. Collaborative Process Identification

The MCFO has partnered with several agencies in the development of the FMP. The agencies are USDA Forest Service; Ashland, Sioux and Beartooth Ranger Districts of the Custer National Forest (CNF); USDI Fish and Wildlife Service, Charles M. Russell (CMR) National Wildlife Refuge (NWR); Bureau of Indian Affairs (BIA), Northern Cheyenne Indian Reservation; and the State of Montana, Department of Natural Resources and Conservation (DNRC) Southern and Eastern Land offices. The partners have agreed that fire program planning, preparedness, fuels management, prevention, suppression, restoration and education will be conducted on an interagency basis with the involvement of cooperators and partners. (Cooperative Fire Management Agreement, also known as the "six party agreement" at the Miles City Interagency Dispatch Center.)

D. Authorities

The statutes, directives, and management plans cited in Appendix A authorize and provide the basis for fire management activities in the MCFO.

II. RELATIONDSHIP TO LAND MANAGEMENT PLANNING/FIRE POLICY

This chapter outlines national policy, regional guidance, state BLM policy, and guidance from the Big Dry and Powder River RMPs. The direction for this FMP will be reviewed annually until a new RMP is completed. The new RMP will update resource direction outlined in the Big Dry and Powder River RMPs. At that time this FMP will be updated or revised as appropriate.

A. Policy

Overall FMP policy is found in:

- ROD for the Powder River RMP (March 1985).
- ROD for the Big Dry RMP (April 1996).
- 1998 BLM Handbook 9214, "Prescribed Fire Management" describes authority and policy for prescribed fire use on public lands administered by the BLM
- September 2000, "Managing the Impacts of Wildfires on Communities and the Environment."
- October 2000, National Cohesive Strategy goal is to coordinate an aggressive, collaborative approach to reduce the threat of wildland fire to communities and to restore and maintain land health www.fireplan.gov.

- August 2001, "Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment -10 Year Comprehensive Strategy" provides a foundation for wildland agencies to work closely with all levels of government, tribes, conservation, and commodity groups and community-based restoration groups to reduce wildland fire risk to communities and the environment.
- May 2002, "Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10 Year Comprehensive Strategy – Implementation Plan."
- August 2002, "Healthy Forests - An Initiative for Wildfire Prevention and Stronger Communities."
- 2001 BLM 8100 Manual.
- ROD for the Off Highway Vehicle Environmental Impact Statement and the Plan Amendment for Montana, North Dakota and South Dakota ROD (June 2003).
- ROD for Standards for Rangeland Health and Guidelines for Grazing Management (August 1997).
- Areas of Critical Environmental Concern Decision Record and approved Amendment of the Billings Powder River and South Dakota RMPs (March 1999).
- Decision Record for the Environmental Assessment and Resource Management Plan Amendment for Fire/Fuels Management in Montana and the Dakotas (September 2003).

B. Resource Management Plan Guidance

Numerous resource conditions/objectives are described throughout the Big Dry and Powder River RMPs, some are specific regarding management activities, including fire which can be used to achieve those objectives. Examples of objectives for which fire would be appropriate include:

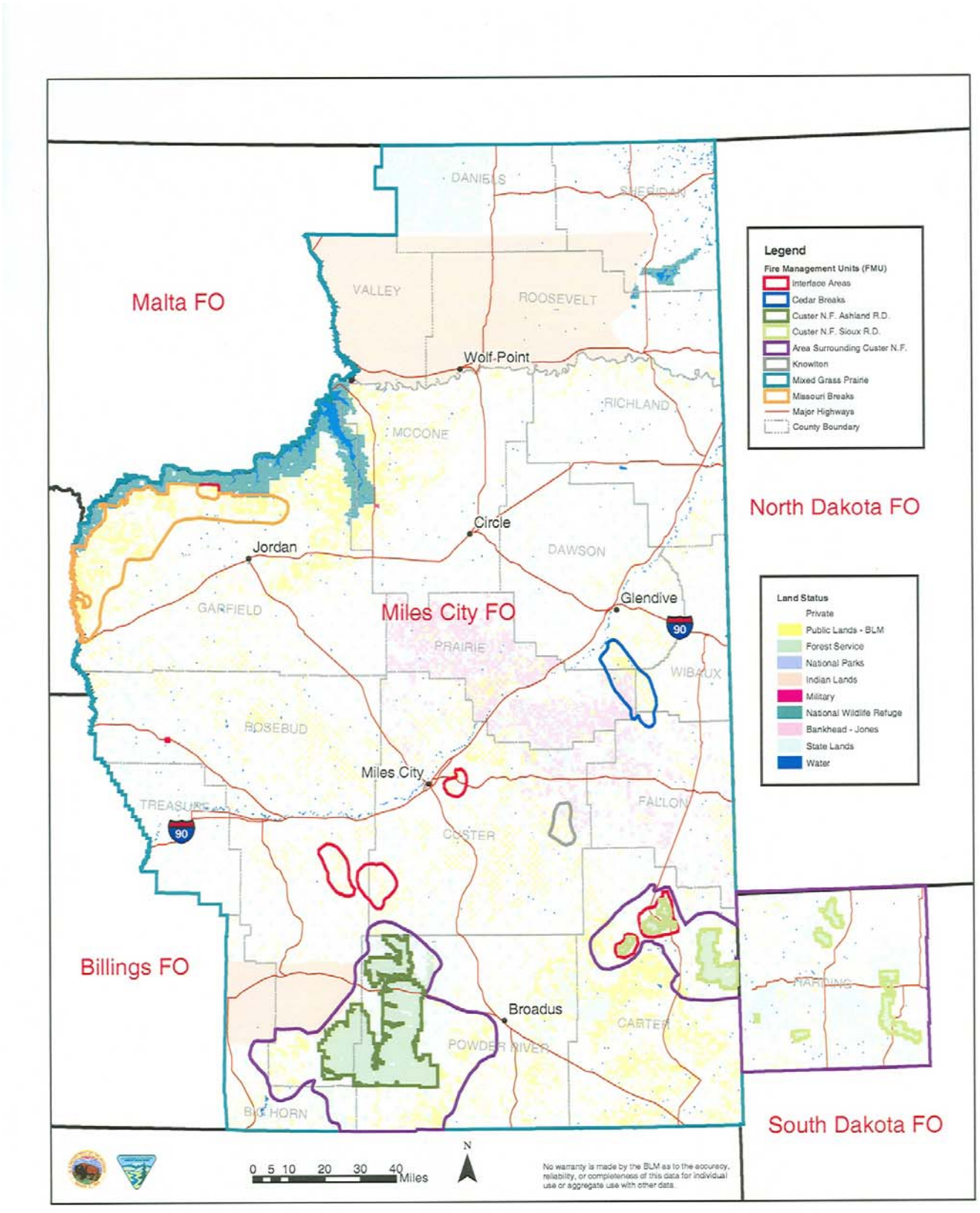
- A cost-effective fire management program which protects life, property, and resources.
- Wilderness study management areas (WSA) and ACECs to meet ecological, recreational, scenic, educational, conservational and historic uses.
- Land and resource planning efforts that coordinate with other federal, state, county, and local governments and adjacent private landowners.

III. WILDLAND FIRE MANAGEMENT STRATEGIES

A. General Management Considerations

This section summarizes fire management conditions and presents management recommendations in the form of priorities, objectives, and strategies. Eight Fire Management Units (FMUs) have been identified in the MCFO. (See map on the following page.) These FMUs are management areas definable by similar vegetation type and condition, predominate historic fire regime (HFR) groups, and management constraints, objectives and strategies. For each FMU, management recommendations are provided for the following fire management

MAP 1. FIRE MANAGEMENT UNITS



activities: wildland fire suppression, WFU, prescribed fire and non-fire fuels treatment, ESR, and community assistance/protection. General management considerations are:

- Use sound scientific resource management principals to restore and/or sustain ecosystem health, balancing with other socieo-economic goals, including public health and safety, and air quality.
- Identify and provide an appropriate management response (AMR) on all wildland fires consistent with resource objectives, standards and guidelines.
- Use prescribed fire, mechanical, chemical and biological treatments to meet management goals and objectives.
- Work collaboratively with communities at risk to develop plans for risk reduction.
- Work collaboratively with federal, state, and local partners to develop cross boundary management strategies and prioritize cross agency fire management actions.

B. Wildland Fire Management Goals

This FMP is consistent with the fire management goals and objectives from national, state, and local fire management guidance and policy presented in section II, Relationship to Land Management Planning/Fire Policy. These principles include:

- **Firefighter and public safety are the highest priority in every fire management activity.**
- Assess risk and mitigate impact of wildland fire to communities.
- Increase scientific knowledge of biological, physical, and sociological factors in fire management.
- Develop partnerships with cooperators, agencies, and private landowners.
- Create an integrated approach to fire and resource management.

C. Wildland Fire Management Options

The MCFO responds with an appropriate management response to all wildland fires, with emphasis on firefighter safety, public safety, suppression cost and resource objects. Suppression responses are initiated based on established (national, state, local) fire management strategy and direction.

D. Description of Wildland Fire Management Strategies by Fire Management Unit

The FMP in this section contains a description of each FMU stating fire management objectives, constraints, and planned actions for that FMU.

Goals and objectives common to all FMUs include:

- **Firefighter and public safety is the first priority**.
- Setting priorities for community infrastructure, natural and cultural resources based on values to be protected, human health and safety, and suppression costs.

- Use prescribed fire, mechanical, chemical, and biological treatments to sustain ecological health and function of fire-adapted ecosystems and reduce the risk of catastrophic wildland fire.
- Involvement of co-operators and partners in fire management planning, preparedness, prevention, suppression, fire use, emergency restoration and rehabilitation, monitoring, research, and education.
- Meet or exceed federal and state air quality standards.
- Protect identified high value cultural, historical and paleontological resources from wildfire and fire management activities.
- Work in partnership with cooperators to support "fire safe" communities through grant and cooperative agreement programs.
- Use landscape level prescribed fire management to return Fire Regimes and Condition Classes from II and III to I (see Appendix B for discussion of Fire Regime and Condition Class).

E. Fire Management Units (FMUs)

1. Cedar Breaks FMU

Location:
This FMU is located south of Glendive, Montana and is included in Dawson, Prairie, Wibaux, and Fallon counties. The Cedar Breaks FMU encompasses portions of the Cedar Creek watershed for an approximate total area of 121,989 acres. The FMU includes 60,388 acres managed by the BLM; 53,783 acres of private land, and 7,818 acres of state or other landownership.

Characteristics:
The Cedar Breaks FMU is composed of juniper woodlands inter-mixed with ponderosa pine. Juniper stands in the area generally consist of dense cohort and regeneration stages of age classes. Juniper is encroaching into the grasslands throughout the area. Other vegetation includes limited amounts of mixed grass and shrubs. Grass species include little bluestem, sideoats and blue grama, western wheatgrass, green needlegrass and bluebunch wheatgrass. Shrub species include silver sagebrush and western snowberry. The area consists of gentle rolling topography and slopes vary from 12 to 75 percent.

Cedar Creek is an intermittent stream flowing to the northwest to join the Yellowstone River approximately ten miles upstream from Glendive Interface. The FMU contains numerous oil and natural gas production facilities which are at risk in the event of a large stand replacing crown fire. Cedar Breaks can be accessed from the Marsh road south of Glendive and from Wibaux on the Pine Unit road. There are no BLM special management areas in this FMU.

Fire History:
Records from 1984 to 2003 show two class B BLM fires for a total of three acres. Most fires are carried by light dead down woody and grass fuels. Predominate cause of fires is lightning. Fire season typically starts in June and runs through mid-September. Fire Behavior Prediction Systems (FBPS) Fuel Models present in the area are 1 and 6. National Fire Danger Rating System (NFDRS) fuel models present in the area are L and F. Torching and crown fire are likely fire behavior in the juniper. Wind and live fuel moistures have the largest influence over fire behavior in the juniper.

Fire Regime/Condition Class (FRCC):
Three potential natural vegetation groups (PNVGs) make up the Cedar Breaks FMU: (1) juniper steepe; (2) ponderosa pine; and (3) plains grasslands. Review Appendix B for a complete zone overview of FRCC.

Table 1. Fire Regime/Condition Class Within the Cedar Breaks FMU

PNVG	Historic Fire Regime	Condition Class	Acres	% of FMU
JUST1	III	II	40,800	30
PPIN9	I	III	27,200	20
PGRA2	I	II	68,000	50

The Juniper Steppe strata are in Condition Class 2, based upon moderate departure in vegetation structure and composition. In this PNVG, high road density, advanced succession, and urbanization have contributed to degraded vegetation conditions which correspond to moderate ecological departure.

The Ponderosa pine stratum is in Condition Class 3, as a result of advanced succession and highly altered fire regime. In this PNVG, uncharacteristic succession and numerous missed fire intervals have caused a high departure in FRCC.

The Plains Grasslands with trees strata is in Condition Class 2, corresponding to moderate levels of departure as a result of fire exclusion, conifer encroachment, development and grazing. Potential FRCC changes in these strata will require mitigation of social and political concerns.

Potential FRCC improvement in all strata can be achieved by prescribed fire and mechanical treatments.

Values at Risk:
There is active livestock grazing with approximately 9,000 animal unit-months (AUMs). Dispersed seasonal recreation is found throughout the area. Along the Marsh road there is a 1½ mile corridor of visual resource management (VRM) class II landscape. Beyond this corridor the remainder of the area is under VRM class III management. Crucial winter range for mule deer, sharp-tail and sage grouse habitat exists. No federal listed species are found in this FMU. Cedar Creek hosts a diversity of macro invertebrates, amphibians, reptiles as well as several species of cyprinids (minnows), two species of sucker and one species of killifish, none of which are classified as sensitive. There is some merchantable timber in the form of posts and poles, and fuel wood. Ranches and farm houses are dispersed throughout the area.

Communities at Risk:
There are no federal listed communities in this FMU.

Below is the locally identified list of communities at risk.

Table 2. Local Communities at Risk Within the Cedar Breaks FMU

Community	County
Mildred	Prairie

Desired Future Condition:

- Non-native grasses, represent a minimal portion of the vegetative communities.
- Noxious weeds and invasive non-native plant species are eliminated.
- A mosaic of grass prairie-sagebrush communities at various age classes and successional stages.
- Maintain and promote fire resilient stands of mature conifers with a mixed grass/shrub understory.
- Improve water yields using vegetative treatments.
- Manage for proper functioning condition in native plant communities.
- Provide quality wildlife habitat.

Fire Management Objectives:

Suppress all fires using the appropriate management response with the intent of minimizing loss of natural resources and improvements, protecting cultural and historic resources, preventing fire spread onto private property, and minimizing the suppression costs. Suppress all wildland fires occurring at Fire Intensity Levels (FILs) 1-3 to 100 acres or less 90 percent of the time. Suppress all fires occurring at FIL 4-6 to 200 acres or less 75 percent of the time. Allow no more than 3 acre of the FMU to burn by wildland fire over a ten year period. Use prescribed fire, mechanical, chemical and biological treatments to treat approximately 17,500 acres over a ten year period.

Fire Management Strategy:

Suppression - The strategic management objectives specific to this FMU include:

- Fireline construction should avoid cultural resource sites.
- Avoid dozer line construction within riparian area. Prior to the construction of machine fire lines, an aquatic specialists or qualified resource advisor, will review the flagged location for the fire line and identify concerns and recommendation.
- Fire camps and staging areas should be placed outside of special management areas.
- Encourage use of natural firebreaks and existing roads to contain wildland fire.
- Protect and/or maintain municipal watersheds.
- Maintain interagency cooperation to facilitate coordinated fire management activities across administrative boundaries.
- Fire management activities will take into account Tribal trust interests.
- To minimize spread of noxious and invasive plant species, equipment used for suppression should be cleaned before arriving on-site and prior to leaving the incident. Staging areas and fire camps should not be located on sites with noxious and invasive plant species infestations.
- Developed recreation sites and structures on public lands will be protected.
- Follow minimum impact suppression tactics (MIST) guidelines.
- The MCFO archaeologist will be notified of any cultural resources encountered during suppression activities.

- Consult with resource advisor when conducting burnout operations.
- Minimize the increase of roaded areas.

Management Constraints:
Consult with resource advisor for specific resource concerns for individual fires (Appendix C).

Wildland Fire Use:
Currently there is no provision for wildland fire use in the RMPs.

Prescribed Fire:
Resource and hazard fuels treatments occur jointly in this polygon. In the past five years approximately 2,500 acres of juniper and ponderosa pine stands have been treated. In the next five years an additional 3,000 acres are proposed for prescribed fire re-entry, new prescribed fire, and mechanical treatment. Projects are planned to use either prescribed fire or mechanical treatments to achieve habitat improvement; reduce juniper and pine encroachment, and reduce stand density; and to remove dead and downed fuels to achieve movement of FRCC II and III landscapes toward FRCC I. In some areas multiple treatments will be required employing a variety of methods to achieve goals. Fuel reduction objectives will vary depending on available funding, work force, and sensitivity of the treatment unit. Since 1998, the MCFO has treated 10,000 acres in the Cedar Breaks FMU with plans to complete 15,000 acres within the next 10 years.

Non-fire Fuels Treatment:
Mechanical and prescribed fire treatments occur jointly in this FMU. Currently, there are no mechanical treatments identified in the next 10 years. There are plans for chemical and biological treatment of 3,000 acres within the next 10 years.

Post Fire Rehabilitation and/or Actions Needed for Restoration:
Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.

Based on the potential effects of wildland fires to overall water quality and riparian systems, suppression, rehabilitation and fuels treatment will be carried out according to the Emergency Stabilization and Rehabilitation Guide (ESR) DM 620-3.

Management actions during wildfire events, prescribed fire or mechanical treatments will be conducted in the manner necessary to maintain the existing visual character of the Landscape, reduce the potential for erosion, invasion of noxious weeds and reduce the potential for the establishment of new roads and trails.

Community Protection/Community Assistance:
The BLM Eastern Zone and counties are in the process of initiating and completing county wide plans. The counties affected in this FMU are listed below:

Table 3. Counties within Cedar Breaks FMU Completing Community Protection Plans

County	Purpose	2002	2003	2004	Total	Spent	Plan
McCone [1]	Fire Plan	0	0	80,000	80,000	0	No

[1] McCone is comprised of five counties working together. The counties are McCone, Prairie, Richland, Dawson, and Wibaux. Although McCone County itself is not in the Cedar Breaks FMU, a portion of Prairie, Dawson and Wibaux counties fall within the boundary of the Cedar Breaks FMU.

2. Mixed-Grass Prairie-Sagebrush FMU

Location:

This FMU extends across the entire Eastern Montana Fire Zone. The Canadian border creates the northern boundary, the Wyoming state line creates the southern boundary, the North and South Dakota state lines create the eastern boundaries, and a mixture of river drainages and county lines make up the western boundary. These western boundaries are identified as the Porcupine River on the Fort Peck Indian Reservation dividing Daniels and Valley counties; Fort Peck Reservoir; the Musselshell River which divides Petroleum and Garfield counties; the Musselshell and Rosebud county lines; the Yellowstone, Big Horn, and Treasure county lines and 9th Grade Meridian complete the southwestern boundary. This FMU encompasses 23,065,794 acres of land between the identified boundaries. The FMU includes 2,282,557 acres of BLM lands, 18,579,364 acres of private lands, and 4,486,430 acres of state or other land ownerships.

This FMU includes lands that are contained within the CMR NWR managed by the U.S. Fish and Wildlife Service; lands contained in the Fort Peck and Northern Cheyenne Indian Reservations managed by the Bureau of Indian Affairs and respective tribal agencies; lands managed by the State of Montana; and lands which are privately owned. This FMU includes; Big Horn, Carter, Custer, Daniels Dawson, Fallon, Garfield, McCone, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Treasure, and Wibaux counties. This FMU includes all parts of the MCFO managed lands that are not specifically mentioned in other FMUs.

Characteristics:

Mixed grass species include little bluestem, sideoats grama, blue grama, western wheatgrass, green needlegrass, and bluebunch wheatgrass. Shrubs are generally scattered distribution in the polygon. Shrub species include silver sagebrush, big sagebrush, western snowberry, and skunkbush sumac. The occasional hardwood draws have a variety of vegetation and trees including cottonwood, green ash and chokecherry present. Native forbs vary depending on soil moisture and precipitation. Heavy concentrations of juniper can be found in woody draws where fire has been absent. Ponderosa pine encroachment is significant where this polygon borders forested polygons.

Topography is gently rolling to steep and broken. Soils are primarily silty and sandy. Primary routes throughout this FMU are interstate 94 and highways 212, 12 and state highways 13, 59, 200. This FMU is accessed by a road network suitable for two wheel and four wheel drive

vehicles. Unimproved and two-track roads are scattered throughout the area. Intermingled private property with BLM public lands, some areas in this FMU may require access through privately owned lands which are intermixed throughout this FMU.

The nonpublic lands within this area are agricultural lands, with uses including livestock grazing, irrigated farming and small grain production. Wildlife community includes whitetail and mule deer, antelope, upland game birds, turkeys, elk, raptors, songbirds and numerous small mammals, amphibians, and reptiles. There is several special management areas located throughout this FMU.

The special management areas are listed below:

Ash Creek Divide Paleo ACEC: A 7,931 acre area located in Garfield County designated for paleontological values. Fire is to be managed with "appropriate management response" employing minimal impact suppression tactics. Protect fossil values by not allowing earth moving equipment, blading of roads or increasing road areas. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited vehicle access.
Topography: Rough, hilly, broken.
Fuels: FBPS fuel models 1 and 4, NFDRS fuel models L and O.
Soils/Vegetation: Poorly developed heavy shaley clays in drainages with some gravelly soils on slopes; scattered grasses: blue grama, western wheatgrass, needle and thread; greasewood and saltbush; occasional juniper, others as found.
Values: Exposed and buried paleontological/fossils.
Political Boundaries: CMR, state, and private are all adjacent to ACEC
Desired Future Condition/Objectives: Preserve current condition and character.
Management Constraints: Limit heavy equipment use to improve condition of existing two track roads for use as fire control lines.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, and 38 to determine which management constraints would apply to this ACEC.

Big Sheep Mountain ACEC: A 360 acre cultural site considered eligible for the National Register of Historic Places. Fire is to be managed with "appropriate management response" employing minimal impact suppression tactics, where management actions will determine fire suppression techniques. Protect archeological values of area by not allowing blading or earth moving equipment. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited.
Topography: Gently rolling grasslands with some step slopes on the side of Sheep Mountain.
Fuels: FBPS fuel models 1 and 2; NFDRS Fuel models A and L.
Soils/Vegetation: Loams, perennial grasslands.
Values: Cultural site, scenic riparian setting.
Political Boundaries: Adjacent private lands.
Desired Future Condition/Objectives: Maintain character and condition of area.

Management Constraints: Limit heavy equipment use, use hand line as much as possible, limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this ACEC.

Black Footed Ferret Reintroduction ACEC: Includes 11,166 acres of public lands divided into seven tracts. There are 1,151 acres of prairie dog colonies that are potential areas for the reintroduction of black-footed ferrets. The area is located in Prairie and Custer counties, west of Terry and is generally comprised of Hunter and Custer Creek drainages north of the Yellowstone River.

Access: Generally via two-track roads from county road 253, the Big Sky Backcountry Byway, north of Terry.
Topography: Gently rolling with occasional steep slopes.
Fuels: FBPS fuel model 1 and 4, NFDRS fuel models L and O.
Soils/Vegetation: Badlands within the 10-15" precipitation zone. Badlands are nearly barren lands broken by drainages, intermingled with small grazable areas. Vegetation is comprised of western and thickspike wheatgrass, green needlegrass, little bluestem, bluebunch wheatgrass, prairie sandreed, alkali sacaton, prairie junegrass, nuttall saltbush, big sagebrush, American vetch, plains muhly, greasewood and juniper.
Values: Prairie dog colonies (potential black-footed ferret recovery site); lack of roads.
Political Boundaries: State and private are all adjacent to WSA privately owned land.
Desired Future Condition/Objectives: Preserve current condition and character; Maintain overall characteristics of landscape; limit fire size.
Management Constraints: Use natural and existing barriers and natural and existing breaks in fuels for fire control lines, limit heavy equipment use, use handlines as much as possible.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 12-24, 26-28, 31, 39-41 to determine which management constraints would apply to this ACEC.

Bug Creek Paleo ACEC: A 3,840 acre site located in McCone County. This area was designated for its paleontological values. Fire is to be managed with "appropriate management response" employing MIST, where management actions will determine fire suppression techniques. Protect fossil values by not allowing earth moving equipment, blading, blading of roads or increasing roaded areas. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited vehicle access from State Highway 24.
Topography: Rough, hilly, and broken.
Fuels: FBPS fuel model 1; NFDRS fuel model L.
Soils/Vegetation: Poorly developed heavy shaley clays in drainages with some gravelly soils on slopes; scattered grasses: blue grama, western wheatgrass, needle and thread; greasewood and saltbush; occasional juniper, others as found.
Values: Exposed and buried paleontological/fossils .

Political Boundaries: CMR and private are adjacent to ACEC.
Desired Future Condition/Objectives: Preserve current condition and character.
Management Constraints: Limit heavy equipment use to improve condition of existing two-track roads for use as fire control lines.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this ACEC.

Calypso Special Recreation Management Area(SMRA): A 69-acre tract of public land adjacent to the Yellowstone River and Terry Badlands WSA and managed similarly to the Terry Badlands WSA in Prairie County. Fire is to be managed with "appropriate management response" employing minimal impact suppression tactics, where management actions will determine fire suppression techniques. Protect recreational and scenic values of area by not allowing earth moving equipment, blading of roads or increasing road areas. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited vehicle access.
Topography: Rough, hilly, broken badlands landscape; Steep breaks and cliffs with some rough and rolling land to generally flat bottomlands.
Fuels: FBPS fuel model 1; NFDRS fuel model L.
Soils/Vegetation: Poorly developed heavy shaley clays with gravelly soils on slopes; blue grama, western wheatgrass, needle and thread in the uplands to rich alluvium; bluegrass, western wheatgrass, cheatgrass brome, willow, cottonwood on the bottomlands.
Values: Wilderness values of solitude and naturalness; scenic landscape.
Political Boundaries: Public and private are all adjacent to area.
Desired Future Condition/Objectives: Preserve current condition and character. Maintain overall character and condition of area and landscape, limit fire size.
Management Constraints: Use natural and existing barriers and natural and existing breaks in fuels for fire control lines. Limit heavy equipment use, use hand line as much as possible, limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 33, 38, 39-41 to determine which management constraints would apply to this SRMA.

Cedar Creek Battlefield Special Management Area (SMA): A 960 acre tract of public land in Prairie County designated as a Special Management Area. This Indian War period battlefield area is noted for its historical/cultural significance, historic landscape and scenic values. Fire is to be managed with "appropriate management response" employing minimal impact suppression tactics, where management actions will determine fire suppression techniques. Protect historical and scenic values of area by not allowing earth moving equipment, blading of roads or increasing road areas. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited.
Topography: Gently rolling grasslands with some step slopes.
Fuels: FBPS fuel model 1; NFDRS fuel model L.
Soils/Vegetation: Loams, perennial grasslands.

Values: Cultural site, scenic setting and historic landscape.
Political Boundaries: Adjacent private and state lands.
Desired Future Condition/Objectives: Maintain character and condition of area.
Management Constraints: Limit heavy equipment use, use hand line as much as possible, limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this SMA.

Finger Buttes ACEC: A 1,520 acre tract of public land located about 40 miles south of Ekalaka in Carter County. This area features high scenic values with tall, slim, smokestack-like sandstone monuments, towers and prominence. Fire is to be managed with "appropriate management response" employing MIST, where management actions will determine fire suppression techniques. Protect scenic values of area by not allowing earth moving equipment, blading of roads or increasing road areas. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited vehicle access.
Topography: Undulating to hilly.
Fuels: FBPS fuel model 1 and 4; NFDRS fuel models L and O.
Soils/Vegetation: Heavy clays, much in deep alluvium. Alkali generally present; scattered grasses: Sagebrush and saltbush, western wheatgrass, blue grama.
Values: Scenic, geologic
Political Boundaries: State and private are adjacent to ACEC.
Desired Future Condition/Objectives: Preserve current condition and character
Management Constraints: Limit heavy equipment use to improve condition of existing two track roads for use as fire control lines. Limit heavy equipment use, use hand line as much as possible, limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 12-24, 26-28, and 39-41 to determine which management constraints would apply to this ACEC.

Hoe Site ACEC: A 144 acre cultural site that has been determined eligible for the National Register of Historic Places. Fire is to be managed with AMR employing MIST, where management actions will determine fire suppression techniques. Protect scenic values of area by not allowing earth moving equipment. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited.
Topography: Gently rolling to rolling grasslands.
Fuels: FBPS fuel models 1; NFDRS fuel model L.
Soils/Vegetation: Loams, perennial grasslands.
Values: Cultural site, riparian setting.
Political Boundaries: Adjacent private lands.
Desired Future Condition/Objectives: Maintain character and condition of area.
Management Constraints: Limit heavy equipment use, use hand line as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this ACEC.

Howrey Island ACEC: A 321 acre tract of public land located on the Yellowstone River about 6 miles west of Hysham in Treasure County. This is a high use recreation area exhibiting riverine riparian vegetation and wildlife habitat. There is an active bald eagle nest on the northeast corner of the island portion of this tract. Travel is limited to the designated BLM road between February 15 and June 1 and would be closed to the use of earth moving equipment between June 2 and February 14. Fire is to be managed with ARM employing MIST, where management actions will determine fire suppression techniques. Protect wildlife, recreational and scenic values of area by not allowing earth moving equipment, blading of roads or increasing road areas. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited, off county road.
Topography: Bottomland, generally flat.
Fuels: FBPS fuel models 1, 2,6,10; NFDRS fuel models L, C, F, and G.
Soils/Vegetation: Rich alluvium; bluegrass, western wheatgrass, cheatgrass brome, willow, cottonwood.
Values: Wildlife, scenic, riparian setting.
Political Boundaries: Adjacent private and state lands.
Desired Future Condition/Objectives: Maintain character and condition of area.
Management Constraints: Limit heavy equipment use, use hand line as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 33, 37, 38, 39-41 to determine which management constraints that would apply to this ACEC.

Jordan Bison Kill ACEC: A 160 acre cultural site that is considered eligible for the National Register of Historic Places. Fire is to be managed with AMR employing MIST, where management actions will determine fire suppression techniques. Protect archeological values of area by not allowing earth moving equipment, blading of roads or increasing road areas. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited.
Topography: Plains to rolling and rough.
Fuels: FBPS fuel model 1; NFDRS fuel model L.
Soils/Vegetation: Sandy and gravelly to heavy clays; blue grama, western wheatgrass, needle and thread.
Values: Cultural site, scenic setting.
Political Boundaries: Adjacent private lands.
Desired Future Condition/Objectives: Maintain character and condition of area.
Management Constraints: Limit heavy equipment use, use hand line as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 12-24, 26-28, 31, 37, 39-41 to determine which management constraints would apply to this ACEC.

Lewis and Clark Histotoric trail SRMA: Fourteen thousand acres of public land along the Missouri and Yellowstone rivers that have special historic significance. Fire is to be managed with AMR employing MIST, where management actions will determine fire suppression techniques. Protect recreational and scenic values of area by not allowing earth moving equipment, blading of roads or increasing road areas. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

> ***Access:*** Limited; isolated tracts along Missouri and Yellowstone rivers; access from rivers or across private lands.
> ***Topography:*** Bottomland, generally flat.
> ***Fuels:*** FBPS fuel model 1, 2, 6, 10; NFDRS fuel models L, C, F, and G.
> ***Soils/Vegetation:*** Rich alluvium; bluegrass, western wheatgrass, cheatgrass brome, willow, cottonwood.
> ***Values:*** Recreation, wildlife, riparian, scenic setting and historic landscape.
> ***Political Boundaries:*** Adjacent private, state, CMR, Fort Peck Reservation, Bureau of Reclamation lands.
> ***Desired Future Condition/Objectives:*** Maintain character and condition of area.
> ***Management Constraints:*** Limit heavy equipment use, use hand line as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-28, 29, 30, 31, 33, 38, 39, 41 to determine which management constraints would apply to this SRMA.

Matthews Recreation Site: A 74 acre tract of public land located on the Yellowstone River about 6 miles east of Miles City in Custer County. This is a high use recreation area exhibiting riverine riparian vegetation and wildlife habitat and is a developed recreation site with picnic and restroom facilities. Travel is limited to the designated BLM roads.

> ***Access:*** Good, from county road.
> ***Topography:*** Bottomland, generally flat.
> ***Fuels:*** FBPS fuel models 1, 2, 4; NFDRS fuel models L, T, and O.
> ***Soils/Vegetation:*** Rich alluvium; bluegrass, western wheatgrass, cheatgrass brome, willow, cottonwood.
> ***Values:*** Recreation, wildlife, riparian, scenic setting
> ***Political Boundaries:*** Adjacent private and state lands.
> ***Desired Future Condition/Objectives:*** Maintain character and condition of area.
> ***Management Constraints:*** Limit heavy equipment use, use hand line as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 33, 38, 39-41 to determine which management constraints would apply to this recreation site.

Mill Iron Site Special Management Area: A 160 acre special management area [buffered by a 4,000 acre area (2,100 acres BLM)] for an 11,000 year old significant cultural site considered eligible for the National Register of Historic Places. Fire is to be managed with AMR employing MIST, where management actions will determine fire suppression techniques. Protect archeological values of area by not allowing blading or earth moving

equipment. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited vehicle access.
Topography: Undulating to hilly.
Fuels: FBPS fuel model 1 and 4, sparse grass, scattered shrubs: greasewood on hilly slopes.
Soils/Vegetation: Heavy clays, much in deep alluvium alkali generally present. Scattered grasses; sagebrush and saltbush, western wheatgrass, blue grama.
Values: Cultural site, scenic setting.
Political Boundaries: State and private are adjacent to ACEC.
Desired Future Condition/Objectives: Preserve current condition and character.
Management Constraints: Limit heavy equipment use to improve condition of existing two track roads for use as fire control lines. Limit heavy equipment use, use hand line as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this SMA.

Piping Plover ACEC: A 15.51 acre site adjacent to a saline wetland/lake about ¾ mile south of the town of Westby. This site is a documented piping plover nesting area. The piping plover is a threatened species under the Endangered Species Act.

Access: State highway 5 runs through Westby. A paved access road heads south out of Westby and crosses into North Dakota. Another access road (gravel) comes back into Montana and can be used to access the public land parcel.
Topography: Gently rolling.
Fuels: Primarily sparse grasses and forbs.
Soils/Vegetation: Silty soils more than 20 inches deep of very fine sandy loam, loam, or silt loam. This includes soils with two inches or more loam or silt loam over clayey subsoils, 10-14 inch precipitation zone (you can loose an engine up to the axles here very easily). Main vegetation includes: needle and thread, western and thickspike wheatgrass, green needlegrass, little bluestem, prairie junegrass, porcupinegrass, blue grama, native legumes, silver sagebrush, western snowberry, and winterfat.
Values: Nesting habitat for an endangered species, piping plover.
Political Boundaries: Privately owned land, eastern boundary of public land parcel is the Montana/North Dakota border.
Desired Future Condition/Objectives: Maintain overall current character of the landscape, limit fire size. Protect nesting habitat for the piping plover.
Management Constraints: Use natural and existing barriers and natural and existing breaks in fuels for fire control lines. Limit heavy equipment use; use hand lines as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-28, 34, 39-41 to determine which management constraints would apply to this ACEC.

Powder River Depot SRMA and ACEC: A 1,386 acre historic site eligible for the National Register of Historic Places. Fire is to be managed with AMR employing MIST, where management actions will determine fire suppression techniques. Protect recreational, scenic and historical values of area by not allowing earth moving equipment, blading of roads or increasing road areas. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited, access across private lands, blocked by railroad grade.
Topography: Bottomland, generally flat.
Fuels: FBPS fuel model 1.
Soils/Vegetation: Rich alluvium; bluegrass, western wheatgrass, cheatgrass brome, willow, cottonwood on the bottomlands.
Values: Recreation, riparian, scenic setting; historical/cultural values and scenic historic landscape.
Political Boundaries: Adjacent private and state lands.
Desired Future Condition/Objectives: Maintain overall character and condition of area and landscape, limit fire size.
Management Constraints: Use natural and existing barriers and natural and existing breaks in fuels for fire control lines. Limit heavy equipment use, use hand lines as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 33, 37, 38, 39-41 to determine which management constraints would apply to this SRMA/ACEC.

Reynolds Battlefield ACEC: A 336 acre tract of public land located about 20 miles southwest of Broadus, along the Powder River. This is a riverine riparian community with high historical/cultural significance. Fire is to be managed with AMR employing MIST, where management actions will determine fire suppression techniques. Protect historical values of area by not allowing earth moving equipment, blading of roads or increasing road areas. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited, access across private lands.
Topography: Bottomland, generally flat to rough broken hills with steep slopes.
Fuels: FBPS fuel model 1; NFDRS fuel model L.
Soils/Vegetation: Rich alluvium; bluegrass, western wheatgrass, cheatgrass brome, willow, cottonwood on the bottomlands to rocky and gravelly and poorly developed in the hills.
Values: Riparian, scenic setting; historical/cultural values and scenic historic landscape
Political Boundaries: Adjacent private and state lands.
Desired Future Condition/Objectives: Maintain overall character and condition of area and landscape. Limit fire size.
Management Constraints: Use natural and existing barriers and natural and existing breaks in fuels for fire control lines. Limit heavy equipment use, use hand lines as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 33, 38, 39-41 to determine which management constraints would apply to this ACEC.

Sand Arroyo Paleo ACEC: A 9,056 acres site in McCone County. The area contains a fossil record of the Cretaceous and Tertiary periods. Fire is to be managed with AMR employing MIST, where management actions will determine fire suppression techniques. Protect fossil values by not allowing earth moving equipment, blading of roads or increasing road areas. A Resource Advisor will be coordinated with for fire management activities.

> ***Access:*** Limited vehicle access from state highway 24.
> ***Topography:*** Rough, hilly, and broken.
> ***Fuels:*** FBPS fuel model 1 and 4; NFDRS fuel models L and O. Sparse grass, scattered shrubs, greasewood on hilly slopes. ;.
> ***Soils/Vegetation:*** Poorly developed heavy shaley clays in drainages with some gravelly soils on slopes; scattered grasses: blue grama, western wheatgrass, needle and thread; greasewood and saltbush; occasional juniper, others as found.
> ***Values:*** Exposed and buried paleontological/fossils.
> ***Political Boundaries:*** CMR and private are adjacent to ACEC.
> ***Desired Future Condition/Objectives:*** Preserve current condition and character.
> ***Management Constraints:*** Limit heavy equipment use to improve condition of existing two track roads for use as fire control lines.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this ACEC.

Seline Site ACEC: An 80 acre site in Dawson County with unique cultural values. Fire is to be managed with "appropriate management response" employing minimal impact suppression tactics, where management actions will determine fire suppression techniques. Protect archeological values of area by not allowing blading or earth moving equipment. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

> ***Access:*** Fair to limited, from off local county road.
> ***Topography:*** Gently rolling grasslands with some step slopes on the sides of drainages.
> ***Fuels:*** FBPS fuel model 1; NFDRS fuel model L.
> ***Soils/Vegetation:*** Loams, perennial grasslands.
> ***Values:*** Cultural site, scenic riparian setting.
> ***Political Boundaries:*** Adjacent private lands.
> ***Desired Future Condition/Objectives:*** Maintain character and condition of area.
> ***Management Constraints:*** Limit heavy equipment use, use hand line as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 38, 39-41 to determine which management constraints would apply to this ACEC.

Smoky Butte ACEC: A 250-foot high prominence on 80 acres of public land located about 8 miles west of Jordan in Garfield County. Smoky Butte contains a rare mineralogical assemblage and is an excellent example of the geologic process of igneous intrusion. Fire is to be managed with (conditional fire suppression techniques) AMR employing MIST, where management actions will determine fire suppression techniques. Protect geologic and scenic

values of area by not allowing earth moving equipment, blading of roads or increasing road areas. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited vehicle access, access across private lands.
Topography: Plains to rolling and rough.
Fuels: FBPS fuel model 1; NFDRS fuel model L.
Soils/Vegetation: Sandy and gravelly to heavy clays; blue grama, western wheatgrass, needle and thread.
Values: Scenic, geologic.
Political Boundaries: Private adjacent to ACEC
Desired Future Condition/Objectives: Preserve current condition and character
Management Constraints: Limit heavy equipment use; use hand line as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 12-24, 26-28, 31, 37, 39-41 to determine which management constraints would apply to this ACEC.

Terry Badlands WSA: There are 42,950 acres of public lands in this parcel located about three miles west of Terry in Prairie County. Deep badland-type habitat arranged in parallel drainages and emptying into the Yellowstone River from a very scenic wildland landscape. Other than the Calypso Trail, which bisects the WSA, there are few trails within the WSA. Fire is to be managed with AMR employing MIST, where management actions will determine fire suppression techniques. Protect wilderness and scenic values of area by not allowing earth moving equipment, blading of roads or increasing road areas without Field Office Manager approval. No unnecessary tree cutting or burning. A Resource Advisor will be coordinated with for fire management activities.

Access: Limited vehicle access to the few existing roads and trails.
Topography: Rough, hilly, broken badlands landscape; steep breaks and cliffs with some rough and rolling land.
Fuels: FBPS fuel model 1; NFDRS fuel model L.
Soils/Vegetation: Poorly developed heavy shaley clays with gravelly soils on slopes; blue grama, western wheatgrass, needle and thread.
Values: Wilderness values of solitude and naturalness; scenic landscape.
Political Boundaries: State and private are all adjacent to WSA
Desired Future Condition/Objectives: Preserve current condition and character.
Management Constraints: Use natural and existing barriers and natural and existing breaks in fuels for fire control lines. Limit heavy equipment use, use hand line as much as possible. Limit tree cutting to minimum necessary.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this WSA.

Fire History:
Between 1984 and 2003 there were 296 BLM fires which burned a total of 106,708 acres. Approximately 70 percent of all fires are lightning caused. Fires in this area have moderate to high rates of spread due to the flashy light fuel types. Fire starts during critical fire danger continued with frequent high winds rapidly change small fires into large fires.

FBPS fuel models present in the area consist of 1, 2, 6, and 9. NFDRS fuel models present are A, L, C, T, U, and E. Fuel loadings vary with timing and amount of annual precipitation.

Fire Regime/Condition Class:
Two PNVGs make up the Mixed Grass Prairie-Sagebrush FMU: (1) Plains Grasslands with shrubs; and (2) Plains Grasslands with trees. Review Appendix I for a complete Zone overview of FRCC.

Table 4. Fire Regime/Condition Class Within the Mixed-Grass Prairie Sagebrush FMU

PNVG	Historic Fire Regime	Condition Class	Acres	% of FMU
PGRA2	I	II	9,200,000	40
PGRA3	I	II	13,800,000	60

The plains grasslands with shrubs and with tree strata are in Condition Class 2, as a result of removing fire as an ecological process. Moderate levels of FRCC departure are a result of conifer encroachment, development, and grazing. Potential FRCC changes in this strata will require mitigation of social and political concerns.

Values at Risk:
Intermixed public, private and state lands occur throughout the area. The majority of the special management areas (SMA), e.g.WSA, Special Recreation Management Area (SRMA), and ACEC, are located in this FMU. The following are a list of values at risk for the area: Cultural and paleontological areas, riparian areas, crops, forage, VRM I, VRM II, fragile soils, oil producing facilities, riparian areas, air quality, recreation, utilities corridors, and range improvements.

Communities at Risk:
There are several communities within this FMU that are listed on the federal register. These Wildland Urban Interface (WUI) communities are at high risk from wildfire. The communities with the county are listed below.

Table 5. Wildland Urban Interface (WUI) Communities Listed on Federal Register

Counties	Communities
Roosevelt	Brockton
Sheridan	Dagmar
Roosevelt	Froid
Sheridan	Homestead
Garfield	Jordan
Custer	Miles City
Garfield	Mosby
Roosevelt	Poplar
Wolf Point	Roosevelt

Below is the locally identified list of communities at risk.

Table 6. Local Communities at Risk Within the Mixed-Grass Prairie Sagebrush FMU

Counties	Communities
Big Horn.	Busby
Carter.	Alzada, Boyes, Capitol, Hammond, Ridge, Ridgeway,
Custer	Beebe, Garland, Horton, Ismay(Joe), Kinsey, Sheffied, Volberg,
Daniels	Carbert, Flaxville, Four Buttes, Madoc, Peerless, Pleasant Prairie, Scobey, West Fork, Whitetail,
Dawson	Bloomfield, Forest Park, Glendive, Hodges, Intake, Lindsey, Stipek,
Fallon	Baker, Ollie, Plevna, Webster, Willard,
Garfield	Cohagen, Haxby, Sand Springs,
McCone	Circle, Vida, Weldon,
Powder River	Belle Creek, Biddle, Broadus, Coalwood,Olive, Powderville,
Prairie	Fallon, McCloud, Terry
Richland	Andes, Crane, Enid, Fairview, Girard, Lambert, Midway, Nohly, Savage, Sidney,
Roosevelt	Bainville, Brockton, Culbertson, Fort Kipp, McCabe, Slab Crossing, Volt
Rosebud	Angela, Catersville, Colstrip, Finch, Forsyth, Hathaway, Ingomar, Rock Springs, Sumatra, Thurlow, Vananda,
Sheridan	Antelope, Coalridge, Dagmar, Medicine Lake, Outlook, Plentywood, Raymond, Redstone, Reserve, Westby, Bighorn, Hysham
Treasure	Myers, Sanders
Wibaux	Carlyle, Saint Phillip, Wibaux

Some farm and ranch operations, and scattered rural subdivisions near public lands are most at risk from wildland fire on public lands. An aggressive suppression response will be used to protect these properties.

Desired Future Condition:

- Non-native grasses, represent a minimal portion of the vegetative communities.
- Noxious weeds and invasive non-native plant species are eliminated.
- A mosaic of grass prairie-sagebrush communities at various age classes and successional stages.
- Maintain and promote fire resilient stands of mature conifers with a mixed grass/shrub understory.
- Improve water yields using vegetative treatments.

- Manage for proper functioning condition in native plant communities.
- Provide quality wildlife habitat.

Fire Management Objectives

Suppress all fires using the AMR with the intent of minimizing loss of natural resources and improvements, protecting cultural and historic resources, preventing fire spread onto private property, and minimizing the suppression costs. Suppress all wildland fires occurring at FILs 1-3 to 100 acres or less 90 percent of the time. Suppress all fires occurring at FIL 4-6 to 200 acres or less 75 percent of the time. Allow no more than 106,700 acres of the FMU to burn by wildland fire over a ten year period. Use prescribed fire, mechanical, chemical and biological treatments to treat approximately 18,000 acres over a ten year period.

Fire Management Strategy

Suppression - The strategic management objectives specific to this FMU include:

- Fireline construction should avoid cultural resource sites.
- Within WSAs, fuels, vegetative treatments and wildland fire management activities should follow BLM Manual H-8550-1, Interim Policy for Lands Under Wilderness Review. The use of earth-moving equipment within these areas requires approval of the authorizing officer.
- Evaluate the resource values, hazards present, and management prescriptions within specific areas when applying guidelines to ACECs.
- Avoid dozer line construction within riparian area. Prior to the construction of machine fire lines, an aquatic specialists or qualified resource advisor, will review the flagged location for the fire line and identify concerns and recommendation.
- Fire camps and staging areas should be placed outside of special management areas.
- Encourage use of natural firebreaks and existing roads to contain wildland fire.
- Protect and/or maintain municipal watersheds.
- Maintain interagency cooperation to facilitate coordinated fire management activities across administrative boundaries.
- Fire management activities will take into account Tribal trust interests.
- Minimize spread of noxious and invasive plant species, equipment used for suppression should be cleaned before arriving on-site and prior to leaving the incident. Staging areas and fire camps should not be located on sites with noxious and invasive plant species infestations.
- Developed recreation sites and structures on public lands will be protected.
- Follow MIST guidelines.
- The MCFO archaeologist will be notified of any cultural resources encountered during suppression activities.
- Consult with resource advisor when conducting burnout operations.
- Minimize the increase of road areas.

Management Constraints

Consult with resource advisor for specific resource concerns for individual fires (Appendix C).

Wildland Fire Use:
Currently there is no provision for wildland fire use in the RMPs.

Prescribed Fire:
Fuel treatments are used to achieve habitat improvement; reduce juniper and pine encroachment, and reduce stand density; and to remove dead and downed fuels. In some areas multiple treatments will be required employing a variety of methods to achieve goals. The MCFO plans to complete 14,000 acres within the next 10 years. Environmental analysis is currently underway for treatment possible of this area in the next five years.

Non-fire Treatments:
Mechanical and prescribed fire treatments occur jointly in this FMU. Currently, treatment includes several timber salvage operations. There are plans for chemical and biological treatment of 5,000 acres within the next 10 years

Post Fire Rehabilitation and or Actions for Restoration:
Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.

Based on the potential effects of wildland fires to overall water quality and riparian systems, suppression, rehabilitation and fuels treatment will be carried out according to the Emergency Stabilization and Rehabilitation Guide (ESR) DM 620-3.

Management actions during wildfire events, prescribed fire or mechanical treatments will be conducted in the manner necessary to maintain the existing visual character of the landscape, reduce the potential for erosion, invasion of noxious weeds, and reduce the potential for the establishment of new roads and trails.

Community Protection/Community Assistance:
The BLM Eastern Zone and counties are in the process of initiating and completing county wide plans. The counties affected in this FMU are listed below:

Table 7. Counties Within the Mixed-Grass Prairie Sagebrush FMU Completing Community Protection Plans

County	Purpose	2002	2003	2004	Total	Spent	Plan
Custer/Miles City	Fire Plan/Fuel Reduction	50,000	143,000	0	193,000	52,043	No
Rosebud [1]	Fire Plan/Fuel Reduction	50,000	143,000	0	193,000	41,928	Draft
McCone [2]	Fire Plan	0	0	80,000	80,000	0	No
Garfield [3]	Fire Plan/Fuel Reduction	0	0	40,000	40,000	0	No

[1] Rosebud County falls within two FMU, Mixed-Grass Prairie Sagebrush and Vicinity of Custer National Forest.
[2] McCone County is comprised of five counties working together. The counties are; McCone, Prairie, Richland, Dawson, and Wibaux. These counties fall within two FMUs, Mixed-Grass Prairie Sagebrush and Cedar Breaks.
[3] Garfield County falls within two FMUs, Mixed-Grass Prairie Sagebrush and Missouri-Musselshell River Breaks.

3. Rural Interface FMU

Location:
This FMU is characterized by intermingled blocks of public, state and private lands, consisting of approximately 214,508 acres. The FMU includes 30,319 BLM acres and 193,331 state and private acres. The more densely populated rural interface areas have been delineated and are identified in the following counties; Carter, Custer, Garfield, Prairie, and Rosebud. These identified rural interface areas are;

- Pine Hills Ranchettes - 10 miles east of Miles City
- Evergreen Subdivision - 12 miles east of Miles City
- Squirrel Ridge Subdivision - 20 miles east of Miles City
- Pine Ridge Estates - east of Miles City
- Moon Creek Subdivision - 25 miles southwest of Miles City
- Wild Horse Subdivision- 35 miles southwest of Miles City
- Musselshell Breaks Subdivision- 50 miles west of Jordan
- Hell Creek- 25 miles northeast of Jordan
- Hill Coulee- 20 miles north of Jordan
- West Pines- 10 miles east of Ekalaka
- Long Pines- 22 miles southeast of Ekalaka
- Ashland/Otter Creek- 90 miles south of Miles City

Characteristics:
Vegetation is dominated by ponderosa pine and mixed grass prairie intermixed with juniper woodlands and sage brush steppe. A majority of the timber stands have three distinct age classes: a mature overstory; a younger, dense pole size class; and pockets of seedlings or saplings. The historical ponderosa pine savannah is currently uncommon. Grass species include little bluestem, sideoats grama, blue grama, western wheatgrass, green needlegrass and bluebunch wheatgrass. Shrub species include silver sagebrush, western snowberry and skunkbush sumac. The occasional hardwood draws have a variety of vegetation and trees including cottonwood, green ash and chokecherry. Native forbs vary depending on soil moisture and precipitation.

Topography is rolling to steep and broken. Soils are primarily silty and sandy. Primary land uses are livestock grazing, recreation and wildlife habitat values. Hardwood draws can also contain heavy populations of juniper. Grass fuel loadings vary annually with precipitation and grazing. Topography is rolling to steep and broken. This FMU is accessed by a road network suitable for two wheel drive vehicle traffic. Some unimproved and two-tracks are scattered throughout the area.

There are no special management areas within this FMU.

Fire History:
Fire cause primarily is lightning. Between 1984 and 2003 there has been 28 BLM fires totaling 1,717 acres with average size class D (300 to 999 acres). Fuel loading is moderate to very high. Grass is the primary carrier and fires in this area have a high resistance to control due to topography and heavy fuels. These areas are all in a vegetation class and fuel type that historically had a fire return interval of 0–35 years. FBPS fuel models represented in the

polygon is: 1, 2, 6, and 9. NFDRS fuel models found in the polygon are A, L, C, and F. Wind, low fuel moistures and ladder fuels increase the likelihood of torching and crowning.

Fire Regime/Condition Class:
Three PNVGs make up the Rural Interface FMU: (1) Plains Grasslands with shrubs; (2) Plains Grasslands with trees; and (3) Ponderosa Pine. Review (Appendix B) for a complete Zone overview of FRCC.

Table 8. Fire Regime/Condition Classes Within the Rural Interface FMU

PNVG	Historic Fire Regime	Condition Class	Acres	% of FMU
PGRA3	I	II	40,000	20
PRAR2	I	II	50,000	25
PPIN9	I	III	110,000	55

The Plains Grasslands with shrubs and with tree strata are in Condition Class 2, as a result of removing fire as an ecological process. Moderate levels of FRCC departure are a result of conifer encroachment, development, and grazing. Potential FRCC changes in this strata will require mitigation of social and political concerns.

The Ponderosa Pine stratum is in Condition Class 3, as a result of advanced succession and a highly altered fire regime. In this PNVG, uncharacteristic succession and numerous missed fires return intervals have caused a high departure in FRCC. Potential FRCC changes in this stratum include mechanical treatments and broadcast burning.

Values at Risk:
Intermixed public and private lands occur throughout the area. The rural interface polygons are often associated with important wildlife habitat areas. Sage grouse habitat and bald eagle nesting areas are located throughout the FMU. Other primary uses include recreation, grazing, utilities corridors, and improvements.

Communities at Risk:
There are no communities in this FMU listed on the Federal Register.

Below is the locally identified list of communities at risk.

Table 9. Local Communities at Risk Within the Rural Interface FMU

Counties	Communities
Carter	Ekalaka
Custer	Mizpah

Desired Future Condition:

- Non-native grasses, represent a minimal portion of the vegetative communities.
- Noxious weeds and invasive non-native plant species are eliminated.
- A mosaic of grass prairie-sagebrush communities at various age classes and successional stages.
- Maintain and promote fire resilient stands of mature conifers with a mixed grass/shrub understory.
- Improve water yields using vegetative treatments.
- Manage for proper functioning condition in native plant communities.
- Provide quality wildlife habitat

Fire Management Objectives

Suppress all fires using the AMR with the intent of minimizing loss of natural resources and improvements, protecting cultural and historic resources, preventing fire spread onto private property, and minimizing the suppression costs. Suppress all wildland fires occurring at FILs 1-3 to 100 acres or less 90 percent of the time. Suppress all fires occurring at FIL 4-6 to 200 acres or less 75 percent of the time. Allow no more than 1700 acres of the FMU to burn by wildland fire over a ten year period. Use prescribed fire, mechanical, chemical and biological treatments to treat approximately 13,500 acres over a ten year period.

Fire Management Strategy

Suppression - The strategic management objectives specific to this FMU include:

- Fireline construction should avoid cultural resource sites.
- Avoid dozer line construction within riparian area. Prior to the construction of machine fire lines, an aquatic specialists or qualified resource advisor, will review the flagged location for the fire line and identify concerns and recommendation.
- Fire camps and staging areas should be placed outside of special management areas.
- Encourage use of natural firebreaks and existing roads to contain wildland fire.
- Protect and/or maintain municipal watersheds.
- Maintain interagency cooperation to facilitate coordinated fire management activities across administrative boundaries.
- Fire management activities will take into account Tribal trust interests.
- Minimize spread of noxious and invasive plant species, equipment used for suppression should be cleaned before arriving on-site and prior to leaving the incident. Staging areas and fire camps should not be located on sites with noxious and invasive plant species infestations.
- Developed recreation sites and structures on public lands will be protected.
- Follow MIST guidelines.
- The MCFO archaeologist will be notified of any cultural resources encountered during suppression activities.
- Consult with resource advisor when conducting burnout operations.
- Minimize the increase of roaded areas.

Management Constraints:

Consult with resource advisor for specific resource concerns for individual fires (Appendix C).

Wildland Fire Use:
Currently there is no provision for wildland fire use in the RMPs.

Prescribed Fire:
Fuel treatments are used to achieve habitat improvement; reduce juniper and pine encroachment, and reduce stand density; and to remove dead and downed fuels. In some areas multiple treatments will be required employing a variety of methods to achieve goals. The MCFO plans to complete 15,000 acres within the next 10 years. Environmental analysis is currently underway to for treatment of this area in the next five years.

Non-Fire Fuels Treatments:
There are plans for mechanical, chemical and biological treatment of 2,000 acres within the next 10 years. A fire salvage timber sale is offered in the Moon Creek area which has a fuels reduction component.

Post Fire Rehabilitation and/or Actions Needed for Restoration:
Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.

Based on the potential effects of wildland fires to overall water quality and riparian systems, suppression, rehabilitation and fuels treatment will be carried out according to the Emergency Stabilization and Rehabilitation Guide (ESR) DM 620-3.

Management actions during wildfire events, prescribed fire or mechanical treatments will be conducted in the manner necessary to maintain the existing visual character of the Landscape, reduce the potential for erosion, invasion of noxious weeds and reduce the potential for the establishment of new roads and trails.

Community Protection/Community Assistance:
The BLM and counties are in the process of initiating and completing county wide assessment plans. Subdivisions that are listed above have or will have environmental analysis underway within the next five years to develop hazard fuels treatments on adjacent BLM lands.

4. Vicinity of Custer National Forest FMU

Location:
This FMU is identified as all public and private lands near and adjacent to the Custer National Forest near Ashland and Ekalaka. Approximately 1,354,947 acres of BLM, state and private land surround the CNF. Of these lands, 171,310 acres are BLM managed, and the remainder, 1,185,799 acres are state and privately owned. The CNF lands are managed by the Ashland and Sioux ranger districts. Ashland is located along Highway 212, approximately 89 miles south of Miles City. Ekalaka is located at the terminus of state highway 7 and 323, approximately 36 miles south of Baker. Several special management areas are located throughout this FMU. These special management areas are categorized as Special Management Areas, ACEC's, and WSA's. This FMU is located in Carter, Custer, Powder River, and Rosebud counties.

Characteristics:
Topographic features vary from rolling grassland to rough breaks and timbered draws. Agricultural fields are found at lower elevation. Primary drainages are oriented north and south. Vegetation is Ponderosa pine, juniper woodlands, sagebrush, and grasslands. Also included in this management zone are those areas of conifer/woodlands associated with the Powder and Tongue river breaks between Highway 212 and the Wyoming state line. Several special management areas are located throughout this FMU.

Below are brief descriptions of the special management areas:

Battle Butte ACEC: A 120-acre tract of public land in Rosebud County. This area is noted for its high historical/cultural significance, high scenic values and possibly relic vegetation attributes. Protect historical and scenic values of the area by not allowing earth moving equipment, blading of roads or increasing road areas. Tree cutting will be limited. All fire management activities will be coordinated with a Resource Advisor.

> ***Access:*** Limited to existing two tracks.
> ***Topography:*** River breaks, rolling to hilly with steep slopes.
> ***Fuels:*** FBPS fuel models 1, 2 and 9; NFDRS Fuel Models A, L, and U.
> ***Soils/Vegetation:*** Rocky and stony to loams and alluvium. Open grasslands mixed with ponderosa pine savannah and juniper.
> ***Values:*** Historical/cultural values and scenic historic landscape.
> ***Political Boundaries:*** Adjacent private lands.
> ***Desired Future Condition/Objectives:*** Maintain overall character of landscape.
> ***Management Constraints:*** Fire suppression objectives will target natural and existing barriers for fire control lines, use hand line. Limit tree cutting and heavy equipment use.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 33, 39-41 to determine which management constraints would apply to this ACEC.

Buffalo Creek WSA: A 5,650 acre tract of public lands located 35 miles southwest of Broadus in Powder River County. This area has very high scenic and wildlife habitat values. Fire management activities will protect wilderness and scenic values of area, use of earth moving equipment or increasing road areas will require Field Office Manager approval. All fire management activities will be coordinated with a Resource Advisor.

> ***Access***: Limited vehicle access with a few existing roads and trails.
> ***Topography:*** Steep breaks and cliffs with some rough and rolling land; broken landscape.
> ***Fuels:*** FBPS fuel model 1; NFDRS fuel model L.
> ***Soils/Vegetation:*** Rich alluvium; bluegrass, western wheatgrass, cheatgrass brome, willow, cottonwood on the bottomlands to rocky and gravelly and poorly developed in the hills.
> ***Values to be protected:*** Wilderness values of solitude and naturalness; scenic landscape.
> ***Political boundaries:*** State and private are all adjacent to WSA.
> ***Desired Future Condition/Objectives:*** Preserve current condition and character.

Management Constraints: Fire suppression objectives will target natural and existing barriers for fire control lines, use hand line. Limit tree cutting and heavy equipment use.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 33, 38, 39-41 to determine which management constraints would apply to this WSA.

Powers-Yonkee Site Special Management Area*:* A 40-acre special management area [buffered by a 360 acre area (40 acres BLM)] for a significant cultural site considered eligible for the National Register of Historic Places. Protect historical and scenic values of the area by not allowing earth moving equipment, blading of roads or increasing road areas. Tree cutting will be limited. All fire management activities will be coordinated with a Resource Advisor.

Access: Limited to an existing two track across private lands.
Topography: Rolling to hilly with steep slopes.
Fuels: FBPS fuel models 1, 2, 9 and possibly 4; NFDRS fuel models L, T, U, and O. Grass, ponderosa pine and juniper
Soils/Vegetation: Rocky and stony to loams and alluvium. Open grasslands mixed with ponderosa pine savannah and juniper.
Values to be Protected: Historical/cultural values and scenic landscape.
Political Boundaries: Adjacent private lands.
Desired Future Condition/Objectives: Maintain overall character of landscape.
Management Constraints: Fire suppression objectives will target natural and existing barriers for fire control lines, use hand line. Limit tree cutting and heavy equipment use.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 12-24, 26-28, 31, 37, 39-41 to determine which management constraints would apply to this SMA.

Zook Creek WSA*:* Approximately 8,438 acres of public lands located about 26 miles southwest of Ashland in Rosebud counties. A combination of wilderness qualities, scenic attributes, high value relic vegetation and wildlife habitat make the area unique. Fire management activities will protect wilderness and scenic values of area, use of earth moving equipment or increasing road areas will require Field Office Manager approval. All fire management activities will be coordinated with a Resource Advisor.

Access: Limited vehicle access to the few existing roads and trails.
Topography: Steep breaks and cliffs with some rough and rolling land; broken landscape.
Fuels: FBPS fuel models 2, 6, and 9; NFDRS fuel models C, T, F, and O.
Soils/Vegetation: Rocky and gravelly and poorly developed in the hills; ponderosa pine and juniper.
Values: Wilderness values of solitude and naturalness; scenic landscape.
Political Boundaries: State and private are all adjacent to WSA.
Desired Future Condition/Objectives: Preserve current condition and character.
Management Constraints: Fire suppression objectives will target natural and existing barriers for fire control lines, use hand line. Limit tree cutting and heavy equipment use.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 33, 38, 39-41 to determine which management constraints would apply to this WSA.

Fire History:
Fire is frequent in this area and is primarily lightning caused. Multiple starts following dry lightning storms are common. From 1984 to 2003 there have been 390 BLM fire starts burning 97,344 acres. The average fire occurrence is 20 fires per year burning 4,867 acres per year with the average fire size of 243 acres per fire. Grass and short-stature shrubs are the primary carriers. Fire has a high resistance to control from July through September due to topography, moderate to very high fuel loadings and low live fuel moistures. The historical fire return interval is 0 - 35 years. FBPS fuel models present are 2, 6, and 9. NFDRS fuel models present are A, L, F, and U. Wind, low fuel moistures and ladder fuels increase the likelihood of torching and crowning.

Fire Regime/Condition Class:
Two PNVGs make up the Vicinity of Custer National Forest FMU: (1) Ponderosa Pine; (2) Plains Grasslands with trees. Review Appendix B for a complete zone overview of FRCC.

Table 10. Fire Regime/Condition Class Within the Vicinity of Custer National Forest FMU

PNVG	Historic Fire Regime	Condition Class	Acres	% of FMU
PPIN9	I	III	125,000	25
PGRA2	I	II	375,000	75

The Plains Grasslands with shrubs and with tree strata are in Condition Class 2, as a result of removing fire as an ecological process. Moderate levels of FRCC departure are a result of conifer encroachment, development, and grazing. Potential FRCC changes in this strata will require mitigation of social and political concerns.

The Ponderosa Pine stratum is in Condition Class 3, as a result of advanced succession and a highly altered fire regime. In this PNVG, uncharacteristic succession and numerous missed fires return intervals have caused a high departure in FRCC. Potential FRCC changes in this stratum include mechanical treatment and broadcast burning.

Values at Risk:
Intermixed public, private and state lands occur throughout the area. Special management areas (WSA, SMA, SRMA, ACEC) are located in this FMU. The following are a list of values at risk for the area: Cultural and paleontological areas, riparian areas, crops, wildlife habitat, forage, hardwood draws, VRM II and VRM III, fragile soils, oil producing facilities, riparian areas, air quality, recreation, utilities corridors, rights-of-way, structures, and range improvements. This FMU interfaces with the CNF.

Communities at Risk:
There are several communities within this FMU that are listed on the federal register. These Wildland Urban Interface (WUI) communities are at high risk from wild fire. The communities are listed in the table below.

Table 11. Wildland Urban Interface (WUI) Communities at Risk on Federal Register in the Vicinity of the Custer National Forest.

Counties	Communities
Rosebud	Ashland, Birney, Birney Divide, Lame Deer

Below is the locally identified list of communities at risk.

Table 12. Local Communities at Risk in the Vicinity of the Custer National Forest FMU

Counties	Communities
Carter	Belltower, Mill Iron,
Powder River	Epsie, Moorhead, Otter, Sonnette, Stacey,
Rosebud	Birney Day School, Brandenburg,

Widely dispersed farm and ranch buildings are located throughout this area. While some ranch infrastructure is located in areas that are somewhat fireproof, much of it is located adjacent to heavy fuels and will require special suppression attention.

Desired Future Condition:

- Non-native grasses, represent a minimal portion of the vegetative communities.
- Noxious weeds and invasive non-native plant species are eliminated.
- A mosaic of grass prairie-sagebrush communities at various age classes and successional stages.
- Maintain and promote fire resilient stands of mature conifers with a mixed grass/shrub understory.
- Improve water yields using vegetative treatments.
- Manage for proper functioning condition in native plant communities.
- Provide quality wildlife habitat

Fire Management Objectives

Suppress all fires using the AMR with the intent of minimizing loss of natural resources and improvements, protecting cultural and historic resources, preventing fire spread onto private property, and minimizing the suppression costs. Suppress all wildland fires occurring at FILs 1-3 to 300 acres or less 90 percent of the time. Suppress all fires occurring at FIL 4-6 to 500 acres or less 75 percent of the time. Allow no more than 97,300 acres of the FMU to burn by wildland fire over a ten year period. Use prescribed fire, mechanical, chemical and biological treatments to treat approximately 10,500 acres over a ten year period.

Fire Management Strategy

Suppression - The strategic management objectives specific to this FMU include:

- Fireline construction should avoid cultural resource sites.
- Avoid dozer line construction within riparian area. Prior to the construction of machine fire lines, an aquatic specialists or qualified resource advisor, will review the flagged location for the fire line and identify concerns and recommendation.
- Fire camps and staging areas should be placed outside of special management areas.
- Encourage use of natural firebreaks and existing roads to contain wildland fire.

- Protect and/or maintain municipal watersheds.
- Maintain interagency cooperation to facilitate coordinated fire management activities across administrative boundaries.
- Fire management activities will take into account Tribal trust interests.
- Minimize spread of noxious and invasive plant species, equipment used for suppression should be cleaned before arriving on-site and prior to leaving the incident. Staging areas and fire camps should not be located on sites with noxious and invasive plant species infestations.
- Developed recreation sites and structures on public lands will be protected.
- Follow MIST guidelines.
- The MCFO archaeologist will be notified of any cultural resources encountered during suppression activities.
- Consult with resource advisor when conducting burnout operations.
- Minimize the increase of roaded areas.

Management Constraints:
Consult with resource advisor for specific resource concerns for individual fires (Appendix C).

Wildland Fire Use:
Currently there is no provision for wildland fire use in the RMPs.

Prescribed Fire:
Fuel treatments are used to achieve habitat improvement; reduce juniper and pine encroachment, and stand density; and to remove dead and downed fuels. In some areas multiple treatments will be required employing a variety of methods to achieve goals. The MCFO plans to complete 7,000 acres within the next 10 years. Potential project areas are in the Maverick Prong, Rough Creek, and the Ekalaka Hills.

Non-fire Fuels Treatments:

Potential mechanical and prescribed fire treatments are being assessed and will occur jointly in this FMU. There are plans for chemical and biological treatment of 4,000 acres within the next 10 years

Post Fire Rehabilitation and/or actions needed for Restoration:
Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.

Based on the potential effects of wildland fires to overall water quality and riparian systems, suppression, rehabilitation and fuels treatment will be carried out according to the Emergency Stabilization and Rehabilitation Guide (ESR) DM 620-3.

Management actions during wildfire events, prescribed fire or mechanical treatments will be conducted in the manner necessary to maintain the existing visual character of the Landscape, reduce the potential for erosion, invasion of noxious weeds and reduce the potential for the establishment of new roads and trails.

Community Protection/Community Assistance:

The BLM Eastern Zone and counties are in the process of initiating and completing county wide plans. The counties affected in this FMU are listed below:

Table 13. Counties within the Vicinity of Custer National Forest FMU Developing Community Protection Plans

County	Purpose	2002	2003	2004	Total	Spent	Plan
Rosebud [1]	Fire Plan/Fuel Reduction	50,000	143,000	0	193,000	41,928	Draft
Carter	Fire Plan/Fuel Reduction	0	143,000	0	80,000	143,000	No

[1] Rosebud County lies within two FMUs, Mixed-Grass Prairie Sagebrush and Vicinity of Custer National Forest.

5. Knowlton-Locate FMU

Location:
This FMU is identified as intermingled blocks of public state and private lands in eastern Custer County. This FMU is located 37 miles southeast of Miles City and can be accessed by traveling Highway 12 east toward Baker. The Knowlton-Locate FMU consists of approximately 36,243 acres, of which 11,677 are BLM lands managed by the MCFO and 32,771 are private lands adjoining or intermixed within public lands. There is no special management areas located within this FMU.

Characteristics:
The area has intermingled blocks of public, state and private land in Eastern Custer County, south and east of the Yellowstone River. Soils are primarily silty and sandy. Primary land uses include livestock grazing, recreation and wildlife habitat values. There are no special management areas in this FMU.

Fire History:
In this FMU fire occurrence from 1984 to 2003 is 6 BLM fires for 527 acres. Large fires are not common in this FMU. Grass is the primary carrier and fires in this area have a high resistance to control due to fuels, topography and roadless areas. The area is susceptible to large catastrophic fire because of current fuel buildup and drought.

Fire Regime/Condition Class:
Two PNVGs make up the Knowlton-Locate FMU: (1) Ponderosa Pine; (2) Plains Grasslands with trees. Review Appendix B for a complete Zone overview of FRCC.

Table 14. Fire Regime/Condition Class Within the Knowlton-Locate FMU

PNVG	Historic Fire Regime	Condition Class	Acres	% of FMU
PPIN9	I	III	25,200	70
PGRA2	I	II	10,800	30

The Ponderosa Pine stratum is in Condition Class 3, as a result of advanced succession and a highly altered fire regime. In this PNVG, uncharacteristic succession and numerous missed fires return intervals have caused a high departure in FRCC. Potential FRCC changes in this stratum include mechanical and prescribed fire treatments.

The Plains Grasslands with shrubs strata is in Condition Class 2, as a result of removing fire as an ecological process. Moderate levels of FRCC departure are a result of conifer encroachment, development, and grazing. Potential FRCC changes in this strata will require mitigation of social and political concerns.

Values at Risk:
Intermixed public and private lands occur throughout the area. The rural interface polygons are often associated with important cultural resources, scattered infrastructure, hardwood draws, VRM II landscape values, croplands and wildlife habitat areas. Other primary uses include recreation, grazing, utilities corridors and forest stands.

Communities at Risk:
There are no communities that are listed in the Federal Register in this FMU. Below is the locally identified list of communities at risk.

Table 15. Local Communities at Risk Within the Knowlton-Locate FMU

Counties	Communities
Custer	Knowlton, Locate

Numerous farm and ranch operations are located throughout the area. Interface safety concerns are high.

Desired Future Condition:

- Non-native grasses, represent a minimal portion of the vegetative communities.
- Noxious weeds and invasive non-native plant species are eliminated.
- A mosaic of grass prairie-sagebrush communities at various age classes and successional stages.
- Maintain and promote fire resilient stands of mature conifers with a mixed grass/shrub understory.
- Improve water yields using vegetative treatments.
- Manage for proper functioning condition in native plant communities.
- Provide quality wildlife habitat

Fire Management Objectives
Suppress all fires using the AMR with the intent of minimizing loss of natural resources and improvements, protecting cultural and historic resources, preventing fire spread onto private property, and minimizing the suppression costs. Suppress all wildland fires occurring at FILs 1-3 to 100 acres or less 90 percent of the time. Suppress all fires occurring at FIL 4-6 to 300 acres or less 75 percent of the time. Allow no more than 525 acres of the FMU to burn by wildland fire over a ten year period. Use prescribed fire, mechanical, chemical and biological treatments to treat approximately 14,000 acres over a ten year period.

Fire Management Strategy

Suppression - The strategic management objectives specific to this FMU include:

- Fireline construction should avoid cultural resource sites.
- Within WSAs, fuels, vegetative treatments and wildland fire management activities should follow BLM Manual H-8550-1, Interim Policy for Lands Under Wilderness Review. The use of earth-moving equipment within these areas requires approval of the authorizing officer.
- Evaluate the resource values, hazards present, and management prescriptions within specific areas when applying guidelines to ACECs.
- Avoid dozer line construction within riparian area. Prior to the construction of machine fire lines, an aquatic specialists or qualified resource advisor, will review the flagged location for the fire line and identify concerns and recommendation.
- Fire camps and staging areas should be placed outside of special management areas.
- Encourage use of natural firebreaks and existing roads to contain wildland fire.
- Protect and/or maintain municipal watersheds.
- Maintain interagency cooperation to facilitate coordinated fire management activities across administrative boundaries.
- Fire management activities will take into account Tribal trust interests.
- Minimize spread of noxious and invasive plant species, equipment used for suppression should be cleaned before arriving on-site and prior to leaving the incident. Staging areas and fire camps should not be located on sites with noxious and invasive plant species infestations.
- Developed recreation sites and structures on public lands will be protected.
- Follow MIST guidelines.
- The MCFO archaeologist will be notified of any cultural resources encountered during suppression activities.
- Consult with resource advisor when conducting burnout operations.
- Minimize the increase of roaded areas.

Management Constraints:

Consult with resource advisor for specific resource concerns for individual fires (Appendix C).

Wildland Fire Use:

Currently there is no provision for wildland fire use in the RMPs.

Prescribed Fire:

Fuel treatments are used to achieve habitat improvement; reduce juniper and pine encroachment and stand density; and to remove dead and downed fuels. In some areas multiple treatments will be required employing a variety of methods to achieve goals. The MCFO plans to complete 12,000 acres within the next 10 years.

Non-fire Fuels Treatments:

Potential mechanical and prescribed fire treatments are being assessed and will occur jointly in this FMU. There are plans for chemical and biological treatment of 2,000 acres within the next 10 years

Post Fire Rehabilitation and/or Actions Needed for Restoration:
Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.

Based on the potential effects of wildland fires to overall water quality and riparian systems, suppression, rehabilitation and fuels treatment will be carried out according to the Emergency Stabilization and Rehabilitation Guide (ESR) DM 620-3.

Management actions during wildfire events, prescribed fire or mechanical treatments will be conducted in the manner necessary to maintain the existing visual character of the Landscape, reduce the potential for erosion, invasion of noxious weeds and reduce the potential for the establishment of new roads and trails.

Community Protection/Community Assistance:
There are no community assessment plans being developed to date.

6. Missouri-Musselshell River Breaks FMU

Location:
This FMU is identified as a scattered pattern of public and privately owned lands. This FMU is located within Garfield County north of Mosby, extending northeast to the CMR NWR. Access to this FMU is achieved by traveling state highway 200 to Mosby. Total area acreage is 544,193 of which 213,815 are BLM managed. Special management areas, WSA's and ACEC's are located within this FMU.

Characteristics:
Topography is rolling to steep and broken with badlands/breaks topography dominating the area along the drainages flowing into the Missouri and Musselshell rivers. Slopes vary from open to heavily vegetated. Soils are primarily clay, silty and sandy and highly erodable.

Vegetation is dominated by ponderosa pine and mixed grass prairie. Timber stands normally have three distinct age classes: a mature overstory consisting of trees in the 12-24 inch diameter at breast height (DBH), a mid-canopy pole-sized cohort in the 4-12 inch DBH, and a less than three inch diameter age class. Other stands have a mature timber overstory with an open mixed grass and shrub understory. Understory vegetation includes mixed grass species: little bluestem, sideoats grama, blue grama, western wheatgrass, green needlegrass, and bluebunch wheatgrass. Shrub species include silver sagebrush, western snowberry, skunkbush sumac, and chokecherry. The occasional ephemeral creeks and coulees have cottonwood, green ash and chokecherry.

This FMU is accessed by a road network suitable for two wheel drive vehicle traffic. Access to fires is often difficult due to rough terrain and road conditions. Larger blocks of public land are adjacent to the CMR NWR along the south shore of Fort Peck Lake in Garfield County. Primary land uses are livestock grazing, recreation, and wildlife habitat values.

Below is a brief description of the special management areas:

Billy Creek WSA: Includes 3,450 acres of public land located in northern Garfield County, 30 miles northwest of Jordan. Fire management activities will protect wilderness and scenic values of area, use of earth moving equipment will require Field Office Manager approval. All fire management activities will be coordinated with a Resource Advisor.

> ***Access:*** Limited vehicle access to existing roads and trails.
> ***Topography:*** Steep breaks and cliffs with some rough and rolling land; broken landscape.
> ***Fuels:*** FBPS fuel models 1 and 2; NFDRS fuel models A and L.
> ***Soils/Vegetation:*** Thin poorly developed rocky soils; blue grama, bluebunch wheatgrass, plains muhly; ponderosa pine and juniper.
> ***Values:*** Wilderness values of solitude and naturalness; scenic landscape.
> ***Political Boundaries:*** CMR, state, and private are all adjacent to WSA.
> ***Desired Future Condition/Objectives:*** Preserve current condition and character.
> ***Management Constraints:*** Fire suppression objectives will target natural and existing barriers for fire control lines, use hand line, limit tree cutting and heavy equipment use.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this WSA.

Bridge Coulee WSA: A 5,900 acre wilderness study area located in Garfield County, 15 miles north of Mosby. Fire management activities will protect wilderness and scenic values of area, use of earth moving equipment will require Field Office Manager approval. All fire management activities will be coordinated with a Resource Advisor.

> ***Access:*** Limited vehicle access of the few existing roads and trails.
> ***Topography:*** Steep breaks and cliffs with some rough and rolling land; broken landscape.
> ***Fuels:*** FBPS fuel model 1; NFDRS fuel model L.
> ***Soils/Vegetation:*** Thin poorly developed rocky soils; blue grama, bluebunch wheatgrass, plains muhly; ponderosa pine and juniper.
> ***Values:*** Wilderness values of solitude and naturalness; scenic landscape.
> ***Political Boundaries:*** State and private are all adjacent to WSA.
> ***Desired Future Condition/Objectives:*** Preserve current condition and character.
> ***Management Constraints:*** Fire suppression objectives will target natural and existing barriers for fire control lines, use hand line, limit tree cutting and heavy equipment use.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this WSA.

Hell Creek ACEC: A 19,169 acre site located in Garfield County. This area is a significant source of information on the time when the dinosaurs became extinct. Fire management activities will protect fossil values of the area. All fire management activities will be coordinated with a Resource Advisor.

Access: Limited vehicle access.
Topography: Rough, hilly, and broken.
Fuels: FBPS fuel models 1 and 4; NFDRS fuel models L and O.
Soils/Vegetation: Poorly developed heavy shaley clays in drainages with some gravelly soils on slopes; scattered grasses: blue grama, western wheatgrass, needle and thread; greasewood and saltbush; occasional juniper, others as found
Values: Exposed and buried paleontological/fossils.
Political Boundaries: CMR, state and private are adjacent to ACEC.
Desired Future Condition/objectives: Preserve current condition and character.
Management Constraints: Limit heavy equipment use to improve condition of existing two track roads for use as fire control lines.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this ACEC.

Musselshell River Breaks WSA: An 8,650 acre site five miles north of Mosby in Garfield County. The area contains three major drainages to the Musselshell River. Fire management activities will protect wilderness and scenic values of area, use of earth moving equipment will require Field Office Manager approval. All fire management activities will be coordinated with a Resource Advisor.

Access: Limited vehicle access of the few existing roads and trails.
Topography: Steep breaks and cliffs with some rough and rolling land; broken landscape.
Fuels: FBPS fuel models 1 and 4; sparse grass, scattered shrubs, greasewood on hilly slopes.
Soils/Vegetation: Thin poorly developed rocky soils; blue grama, bluebunch wheatgrass, plains muhly; ponderosa pine and juniper.
Values: Wilderness values of solitude and naturalness; scenic landscape.
Political Boundaries: State and private are all adjacent to WSA.
Desired Future Condition/Objectives: Preserve current condition and character.
Management Constraints: Fire suppression objectives will target natural and existing barriers for fire control lines, use hand line, limit tree cutting and heavy equipment use.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would apply to this WSA.

Seven Blackfoot WSA: A 23,190 acre site in Garfield County, 30 miles northwest of Jordan. The WSA contains about 20,250 acres of BLM land contiguous to two CMR NWR wilderness study areas. Fire management activities will protect wilderness and scenic values of area, use of earth moving equipment will require Field Office Manager approval. All fire management activities will be coordinated with a Resource Advisor.

Access: Limited vehicle access to the few existing roads and trails.
Topography: Steep breaks and cliffs with some rough and rolling land; broken landscape.
Fuels: FBPS fuel models 2 and 9; NFDRS fuel models L and U.

Soils/Vegetation: Thin poorly developed rocky soils; blue grama, bluebunch wheatgrass, plains muhly; ponderosa pine and juniper.
Values: Wilderness values of solitude and naturalness; scenic landscape.
Political Boundaries: State and private are all adjacent to WSA.
Desired Future Condition/Objectives: Preserve current condition and character.
Management Constraints: Fire suppression objectives will target natural and existing barriers for fire control lines, use hand line, limit tree cutting and heavy equipment use.

Review Appendix C-2.5.1.1 section 1-8; 2.5.3.1 section 9, 12-24, 26-28, 31, 37, 38, 39-41 to determine which management constraints would be appropriately applied to this WSA.

Fire History:
Large fires exceeding one thousand acres occur on an average of every three years. The area has a high fire occurrence due to frequent lightning storms. Between 1984 and 2003, there have been 126 BLM fires consuming 152,198 acres. In 2003 the Missouri Breaks Complex consisted of four large fires and burned over 100,000 acres. The historical fire return interval is 0 - 35 years. FBPS fuel models present are 2, 6, and 9. NFDRS fuel models present are A, L, F, and U. Fuel loading is moderate to very high. Grass and short-stature shrubs are the primary carriers. Encroachment is occurring in grassland areas. Wind, low fuel moistures and ladder fuels increase the likelihood of torching and crowning. Forest stand densities are high, and the area is at risk to a large stand replacing fire.

Fire Regime/Condition Class:
The Missouri-Musselshell river breaks is comprised of four PNVGs: (1) Ponderosa Pine; (2) Juniper-Pinyon; (3) Plains Grasslands with trees; and (4) Plains Grasslands with shrubs. Review (Appendix B) for a complete zone overview of FRCC.

Table 16. Fire Regime/Condition Class Within the Missouri-Musselshell River Breaks FMU

PNVG	Historic Fire Regime	Condition Class	Acres	% of FMU
PPIN9	I	III	272,000	50
JUST1	I	II	81,600	15
PGRA2	I	II	136,000	25
PGRA3	I	II	54,400	10

The Ponderosa Pine stratum is in Condition Class 3, as a result of advanced succession and a highly altered fire regime. In this PNVG, uncharacteristic succession and numerous missed fires return intervals have caused a high departure in FRCC. Potential FRCC changes in this stratum include mechanical and prescribed fire treatments.

The Juniper-Pinyon stratum is in Condition Class 2, as a result of a moderately altered fire regime. In this PNVG, uncharacteristic succession and numerous missed fires return intervals have caused a moderate departure in FRCC. Potential FRCC changes in this stratum include prescribed fire treatments.

The Plains Grasslands with shrubs and with trees strata is in Condition Class 2, as a result of removing fire as an ecological process. Moderate levels of FRCC departure are a result of conifer encroachment, development, and grazing. Potential FRCC changes in this strata will require mitigation of social and political concerns.

Values at Risk:
Intermixed public, private and state lands occur throughout the area. Special management areas (WSA, SMA, SRMA, ACEC) are located in this FMU. The following are a list of values at risk for the area: Cultural and paleontological areas, riparian areas, crops, wildlife habitat, forage, hardwood draws, VRM I and VRM II, fragile soils, forest stands, oil producing facilities, riparian areas, air quality, recreation, utilities corridors, rights-of-way, structures, and range improvements. This FMU interfaces with the CMR NWR.

Communities at Risk:
There are no communities that are listed in the Federal Register in this FMU.

Below is the locally identified list of communities at risk.

Table 17. Local Communities at Risk Within the Missouri-Musselshell River Breaks FMU

County	Community
Garfield	Mosby

Widely dispersed farm and ranch buildings in the Garfield County portion of the breaks are considered to have high risk potential for escaped fire. Cropland and ranch facilities are a secondary concern.

Desired Future Condition:

- Non-native grasses, represent a minimal portion of the vegetative communities.
- Noxious weeds and invasive non-native plant species are eliminated.
- A mosaic of grass prairie-sagebrush communities at various age classes and successional stages.
- Maintain and promote fire resilient stands of mature conifers with a mixed grass/shrub understory.
- Improve water yields using vegetative treatments.
- Manage for proper functioning condition in native plant communities.
- Provide quality wildlife habitat

Fire Management Objectives
Suppress all fires using the AMR with the intent of minimizing loss of natural resources and improvements, protecting cultural and historic resources, preventing fire spread onto private property, and minimizing the suppression costs. Suppress all wildland fires occurring at FILs 1-3 to 200 acres or less 90 percent of the time. Suppress all fires occurring at FIL 4-6 to 300 acres or less 75 percent of the time. Allow no more than 152,000 acres of the FMU to burn by wildland fire over a ten year period. Use prescribed fire, mechanical, chemical and biological treatments to treat approximately 83,000 acres over a ten year period.

Fire Management Strategy

Suppression: - The strategic management objectives specific to this FMU include:

- Fireline construction should avoid cultural resource sites.
- Within WSAs, fuels, vegetative treatments and wildland fire management activities should follow BLM Manual H-8550-1, Interim Policy for Lands Under Wilderness Review. The use of earth-moving equipment within these areas requires approval of the authorizing officer.
- Evaluate the resource values, hazards present, and management prescriptions within specific areas when applying guidelines to ACECs.
- Avoid dozer line construction within riparian area. Prior to the construction of machine fire lines, an aquatic specialists or qualified resource advisor, will review the flagged location for the fire line and identify concerns and recommendation.
- Fire camps and staging areas should be placed outside of special management areas.
- Encourage use of natural firebreaks and existing roads to contain wildland fire.
- Protect and/or maintain municipal watersheds.
- Maintain interagency cooperation to facilitate coordinated fire management activities across administrative boundaries.
- Fire management activities will take into account Tribal trust interests.
- Minimize spread of noxious and invasive plant species, equipment used for suppression should be cleaned before arriving on-site and prior to leaving the incident. Staging areas and fire camps should not be located on sites with noxious and invasive plant species infestations.
- Developed recreation sites and structures on public lands will be protected.
- Follow MIST guidelines.
- The MCFO archaeologist will be notified of any cultural resources encountered during suppression activities.
- Consult with resource advisor when conducting burnout operations.
- Minimize the increase of roaded areas.

Management Constraints:

Consult with resource advisor for specific resource concerns for individual fires (Appendix C).

Wildland Fire Use:

Currently there is no provision for wildland fire use in the RMPs.

Prescribed Fire: Projects are planned to use either prescribed fire or mechanical treatments to achieve ecosystem health, habitat improvement, reduce juniper and pine encroachment, reduce stand density and to remove dead and downed fuels. Stands have missed several burn cycles and are beyond the natural range of variation for stand structure and composition. The area has large blocks of contiguous public lands and little ranch-related infrastructure and lends itself well to large-scale landscape-level prescribed fire projects. Environmental Analysis has been initiated for treatment of 4500 acres. In some areas multiple treatments will be required. Plans are underway to treat 80,000 acres within the next 10 years.

Non-fire fuels Treatment:
Potential mechanical and prescribed fire treatments are being assessed and will occur jointly in this FMU. The MCFO utilizes chemical and biological treatments. These treatments are primarily applied in conjunction with invasive plant species removal. The MCFO plans to treat 4,000 acres within the next 10 years

Post Fire Rehabilitation and/or Actions Needed for Restoration:
Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.

Based on the potential effects of wildland fires to overall water quality and riparian systems, suppression, rehabilitation and fuels treatment will be carried out according to the Emergency Stabilization and Rehabilitation Guide (ESR) DM 620-3.

Management actions during wildfire events, prescribed fire or mechanical treatments will be conducted in the manner necessary to maintain the existing visual character of the Landscape, reduce the potential for erosion, invasion of noxious weeds and reduce the potential for the establishment of new roads and trails.

Community Protection/Community Assistant:
The BLM Eastern Zone and counties are in the process of initiating and completing county wide plans. The counties affected in this FMU are listed below:

Table 18. Counties Within the Mixed-Grass Prairie Sagebrush FMU Developing Community Protection Plans

County	Purpose	2002	2003	2004	Total	Spent	Plan
Garfield [1]	Fire Plan/Fuel Reduction	0	0	40,000	40,000	0	No

[1] Garfield County falls within two FMU, Mixed-Grass Prairie Sagebrush and Missouri-Musselshell River Breaks.

7. Ashland Ranger District FMU

Location:
National Forest Service (NFS) lands occupy a majority of the uplands and non-developed drainage bottoms. Most private lands within the forest boundary are located in the drainage bottoms along live or intermittent streams; however some private or patented lands are located on the ridge tops. Landownership adjacent to the forest boundary is a mix of BLM, state and private, with the majority of the ownership being private.

The Ashland Ranger District of the CNF is located in Powder River and Rosebud counties. Access is gained to this FMU from multiple directions, the most common being highway 212 and Otter Creek road. This FMU is identified as all NFS managed lands within the Ashland Ranger District boundaries of the CNF. This FMU contains special management areas for hiking and riding areas.

- Cook Mountain Hiking and Riding Area

- King Mountain Hiking and Riding Area
- Tongue River Hiking and Riding Area

The Ashland Ranger District encompasses 500,000 acres of forested lands intermixed with privately owned lands. Most privately owned lands are found in the drainage bottoms along intermittent streams although some patented lands are located within the forested areas and on hills or mesas of ponderosa pine rising above rolling grasslands. Landownership adjacent to the National Forest lands is a mix of BLM, state and private.

Characteristics:
The drainage bottoms are typically the most productive soils and support agricultural land use on private lands, with hardwoods and shrubs on the NFS lands. The north and east aspects typically support a ponderosa pine and shrub cover type. The south and west aspects as well as ridge tops are typically support open ponderosa pine, grass and shrubs. NFS lands with an elevation range of 3,000 to 4,000 feet, steeper slopes of 40 to 60 percent, are usually short with only 500 feet in elevation difference. Numerous east to west drainages break up the FMU into large homogenous compartments.

Fire History:
Normally there is a dry early season March and April, with a wet spring in May and June, followed by a hot, dry summer with frequent thunderstorms in July and August, and a warm dry September and October with little lightning activity. This FMU has approximately 35 lightning fires, averaging 300 acres being burned per year. Stand conditions are moderately to heavily stocked ponderosa pine. Current conditions increase the risk of a stand replacement fire. Since 1988 there have been 10 large fires (Class F & > 1,000 acres+) in this FMU. The Flex fire(2,880 acres) and Shiller fire (15,250 acres) in 1988; the Wild fire (1,800 acres) and the Chelsea fire (15,250 acres) in 1989; the Blank fire (7,379 acres) in 1992; and the Tobin fire (9,254 acres), Stag fire (61,649 acres) and Spot fire (1,140 acres) in 2000; the Wiley fire (4900 acres) in 2003. In the past 10 years lightning has caused 96 percent of all ignitions.

Fire Regime/Condition Class:
Multistoried ponderosa pine stands, pine colonization of historic grasslands, and moderate to heavy fuel loads in areas where past high intensity fires have occurred has altered the fuel profile across most of this FMU, when compared to historic conditions. The historic fire condition class is Class 1, current condition class is Class 2 and in some areas Class 3.

Values at Risk:
There is active livestock grazing which includes water and range developments. Dispersed seasonal recreation is found throughout the NFS lands. Winter range for mule deer, sharp-tail and sage grouse habitat exists. No federal listed species noted. Ranches and farm houses are dispersed throughout the area. There are several areas of merchantable timber.

Communities at Risk:
Widely dispersed farm and ranch buildings are located throughout this area. While some ranch infrastructure is located in areas that are somewhat fire resistant, much of it is located adjacent to heavy fuels and will require special suppression attention.

Desired Future Conditions:

- Non-native grasses, represent a minimal portion of the vegetative communities.
- Noxious weeds and invasive non-native plant species are eliminated.
- A mosaic of grass prairie-sagebrush communities at various age classes and successional stages.
- Maintain and promote fire resilient stands of mature conifers with a mixed grass/shrub understory.
- Improve water yields using vegetative treatments.
- Manage for proper functioning condition in native plant communities.
- Provide quality wildlife habitat

Fire Management Objectives

- Protect human life and property from wildland fire. Safety is the primary concern of every management action.
- Restore fire to its natural role and use prescribed fire to maintain healthy and dynamic ecosystems that meet management objectives.
- Use appropriate management response on public lands by considering the full range of alternatives.
- Protect those agency-identified resources that are at risk from fire.
- Minimize adverse effects of fire suppression.
- Manage all aspects of the fire management program in a cost effective manner.

Fire Management Strategy

Suppression - The goal is to safely suppress unwanted wildland fires at a minimum cost consistent with land and resource management objectives and fire management direction. All wildland fire that escapes initial attack will have a Wildland Fire Situation Analysis (WFSA) prepared in a timely manner. The WFSA will serve as the decision record for selection of the appropriate management response. The correct response to a specific wildland fire will be determined through an evaluation of public and firefighter safety, fire behavior, values at risk, potential suppression damage, and availability of suppression resources. Current forest plan direction allows a full range of management strategies.

Critical features that influence fire behavior in these units are fuel moisture, wind, and multi-storied pine stands. Terrain can be a factor, but for the most part slopes are short and allow for rapid initial attack with engines and dozers. Under high fire dangers, fire intensity can be very extreme creating difficult control actions and 1,000-5,000 acre runs in one burning period are common. The suppression targets are listed in the CNF Fire Management Plan. The targets are to suppress all fires at any FIL at 100 acres or less.

Wildland Fire Use:

The Custer National Forest Plan does allow fire to be utilized for resource benefit. Currently there are no prescriptions to allow fire for resource benefit use.

Prescribed Fire:

The jurisdictional agency, U.S. Forest Service (USFS) provides personnel and budgets for the implementation and completion of fuels management on NFS lands. Under their plan the goals are:

- A combination of treatments should be used that efficiently and effectively meet fuels management objectives.
- Use prescribed fire, both planned and unplanned ignitions, to meet management area goals. Minimize impact to air and soil quality.
- Activity fuels should be treated to conform to management area goals. Projects shall not be undertaken that cannot effectively mitigate a hazardous fuels situation.

Non-fire Fuels Treatments:
Mechanical treatments for fuel reduction will be used to modify wildland fuels to reduce the flammability and resistance to control. The mechanical reduction of fuels near structures and other developments is the preferred option for treating fuels. In many instances this treatment will precede an application of prescribed fire. Non-fire fuels treatment most commonly used may include thinning, pruning, lop and scatter, hand or machine piling, chipping or mulching or removal as fuel wood by the general public.

The foremost outcome of mechanical treatment is the enhancement of firefighter, public safety, and the protection of property and cultural sites. Reduction of fire suppression costs due to decreased severity and resistance to control is also expected.

Post Fire Rehabilitation and/or Actions Needed for Restoration:
An inter-disciplinary team will develop plans for post fire rehabilitation. Post fire rehabilitation and restoration will be used to facilitate reestablishment of the potential natural community of the site.

Community Protection/Community Assistance:
The Ashland Ranger District works in conjunction with other federal, state and local agencies to set priorities for communities' protection and assistance.

8. Sioux Ranger District FMU

Location:
NFS lands occupy a majority of the area within the district sub-units, with some state and private land ownerships intermixed. Adjacent to the NFS boundary is a mix of private and some BLM. The Sioux Ranger District is located in the southeast corner of Montana and the northwest corner of South Dakota, in Carter and Harding counties. Access is made to the Sioux Ranger District from state highways 7 and 323. The district is composed of eight separate units of forest service public lands and has often been described as "islands of green in a sea of rolling prairie." There are two classified National Landmarks on the District. These are the Castles and Capitol Rock national landmarks. The Sioux Ranger District FMU encompasses a total of 163,000 acres within its NFS land boundaries.

Characteristics:
The drainage bottoms support a mix of hardwoods and shrubs, with a mix of ponderosa pine, grass, sage and other shrubs supported on the slopes and ridge tops. NFS lands in Montana are part of the Sioux Ranger District, which includes the Long Pines, Ekalaka Hills and Chalk Buttes. Elevations range from 3,200 to 4,000 feet. The general topographic features are short, steep slopes transitioning to prairie grassland.

Fire History:
Normally there is a dry season during March and April, with a wet spring in May and June, followed by a hot, dry summer with frequent thunderstorms in July and August, and then a warm dry September and October with little lightning activity. This FMU has 6 lightning fire starts and burns 41 acres per year. The cover type present is a multistoried ponderosa pine stand that has a high probability for high intensity wildfires. Since 1988 there have been two large fires (Class F & > 1,000 acres +) in this FMU. The Brewer fire burned 58,220 acres in 1988 and the Kraft Springs Fire burned 69,900 acres in 2002, which expanded the 1988 burn area. In the last ten years lightning cause 96 percent of the wildfires.

Fire Regime/Condition Class:
Multistoried ponderosa pine stands, pine colonization of historic grasslands and moderate to heavy fuel loads in areas where past high intensity fires have occurred, has altered the fuel profile across most of this FMU, when compared to historic conditions. The historic fire condition class is Class 1, current condition class is Class 2 and in some areas Class 3

Values at Risk:
Dispersed seasonal recreation is found throughout the NFS lands. Winter range for mule deer, sharp-tail and sage grouse habitat exists. No federal listed species noted. Ranch and farm structures and infrastructure are dispersed throughout the area. There is active livestock grazing and several areas of merchantable timber.

Communities at Risk:
There are no federally listed Communities at Risk in this FMU. Ranch infrastructure is located adjacent to heavy fuels and will require special suppression attention.

Fire Management Objectives

- Protect human life and property from wildland fire. Safety is the primary concern of every management action.
- Restore fire to its natural role and use prescribed fire to maintain healthy and dynamic ecosystems that meet management objectives.
- Use appropriate management response on public lands by considering the full range of alternatives.
- Protect those agency-identified resources that are at risk from fire.
- Minimize adverse effects of fire suppression.
- Manage all aspects of the fire management program in a cost effective manner.

Desired Future Conditions:

- Non-native grasses, represent a minimal portion of the vegetative communities.
- Noxious weeds and invasive non-native plant species are eliminated.
- A mosaic of grass prairie-sagebrush communities at various age classes and successional stages.
- Maintain and promote fire resilient stands of mature conifers with a mixed grass/shrub understory.
- Improve water yields using vegetative treatments.
- Manage for proper functioning condition in native plant communities.
- Provide quality wildlife habitat

Fire Management Strategy

Suppression - The goal is to safely suppress unwanted wildland fires at a minimum cost consistent with land and resource management objectives and fire management direction. All wildland fire that escapes initial attack will have a WFSA prepared in a timely manner. The WFSA will serve as the decision record for selection of the appropriate management response. The correct response to a specific wildland fire will be determined through an evaluation of public and firefighter safety, fire behavior, values at risk, potential suppression damage, and availability of suppression resources. Current forest plan direction allows a full range of management strategies.

Critical features that influence fire behavior in this unit are fuel moisture, wind, and multistoried pine stands. Terrain can be a factor, but for the most part slopes are short and allow for rapid initial attack with engines and dozers. Under high fire dangers, fire intensity can be very extreme creating difficult control actions and 1,000 to 5,000 acre runs in one burning period are fairly common. The suppression targets are listed in the CNF Fire Management Plan. The goal is to suppress all fires at 100 acres or less in all FILs.

Wildland Fire Use:

The CNF plan does allow fire to be utilized for resource benefit. Currently there are no prescriptions to allow fire for resource benefit use.

Prescribed Fire:

The jurisdictional agency, USFS, provides personnel and budget for the implementation and completion of fuels management on NFS lands. Under their plan the goals are:

- A combination of treatments should be used that efficiently and effectively meet fuels management objectives.
- Use prescribed fire, both planned and unplanned ignitions, to meet management area goals. Minimize impact to air and soil quality.
- Activity fuels should be treated to conform to management area goals. Projects shall not be undertaken that cannot effectively mitigate a hazardous fuels situation.

Non-fire Fuels Treatments:

Mechanical treatments for fuel reduction will be used to modify wildland fuels to reduce the flammability and resistance to control. The mechanical reduction of fuels near structures and other developments is the preferred option for treating fuels. In many instances this treatment will precede an application of prescribed fire.

Non fire fuels treatment most commonly used may include thinning, pruning, lop and scatter, hand or machine piling, chipping or mulching or removal as fuel wood by the general public. The foremost outcome of mechanical treatment is the enhancement of fire fighter, public safety and the protection of property and cultural sites. Reduction of fire suppression costs due to decreased severity and resistance to control would also be expected.

Post Fire Rehabilitation and/or Actions Needed for Restoration:

An inter-disciplinary team will develop plans for post fire rehabilitation. Post fire rehabilitation and restoration will be used to facilitate reestablishment of the potential natural community of the site.

Community Protection/Community Assistance:
The Sioux Ranger District works in conjunction with other federal, state and local agencies to set priorities for communities' protection and assistance.

IV. Fire Management Components

A. Wildland Fire Suppression

1. Fire History

The Eastern Montana Zone exhibits a very active fire season, with an average fire occurrence of 90 fires that burn approximately 34,582 acres per year. The major cause of fires is lighting and multiple fire start days are common during active lighting. Generally the season starts in April and continues through September with the majority of the fires occurring during the months of July and August. Following is a table that represents the 20 year fire history (1984-2003). Fire Class sizes are broken down in the table: A (<.2 acres), B (.3-9 acres), C (10-99 acres), D (100-299 acres), E (300-999 acres), F (1000-4999 acres), G (5000+ acres).

Table 19. Eastern Montana Zone Fire History by Fire Size Class

FMU	Fire Class							Total # Fires	Total Acres
	A	B	C	D	E	F	G		
Cedar Breaks	0	2	0	0	0	0	0	2	3
Mixed Grass Prairie-Sagebrush	35	81	84	37	35	19	5	296	106,708
Rural Interface	9	10	6	1	2	0	0	28	1717
Vicinity of Custer National Forest	157	159	50	10	7	5	2	390	97,344
Knowlton-Locate	1	3	1	0	1	0	0	6	527
Missouri-Musselshell River Breaks	16	49	33	11	10	5	2	126	152,198
Ashland Ranger District	184	497	72	7	6	6	3	775	52,800
Sioux Ranger District	35	109	22	3	5	2	5	181	280,343
TOTALS	437	910	268	69	66	37	17	1,804	691,640

2. Suppression Preparedness Actions

The MCFO FMP is based on the concept that all wildland fires will be subject to an appropriate management response in accordance with management objectives for that FMU and under the direction established in the "Interagency Standards for Fire and Fire Aviations 2004." AMR strategies are tailored to address areas of significant constraints including ACECs, WSAs, critical habitat for threatened and endangered species, areas of soil instability, and areas of other critical resource concerns. All fire management plans for the MCFO are located at MCFO. (See section V., Organization and Budget, of this document for a complete summary of the preparedness organization.)

3. Community Education/Prevention-Mitigation-Community Assistance Activities

Education and prevention are an active part of the MCFO fire management program. Details of the prevention program may be found in the MCFO Wildland Fire Prevention Plan and/or the Risk Assessment and Mitigation Strategies Plan (RAMS), available at the MCFO..

Wildland fire education/prevention programs are conducted throughout the year by the Fire Mitigation/Education Specialist as well as other members of the staff. Fire education concepts, applications and materials are delivered to the appropriate audience levels. Courses, exhibits, meetings, events and presentations are developed and implemented. Interagency meetings, coordination workshops and training activities are also a part of the program. Working with other federal, state and local groups and entities is a priority for all activities.

MCFO is partnering with several counties in eastern Montana to complete risk assessment and mitigation plans. Making communities safe from wildfire is a priority. Mitigation activities are conducted in partnership with the local communities each year, in conjunction with the cooperative agreements for community assistance.

Rural fire assistance (RFA) is active within the MCFO. In partnership with the State of Montana, Department of Natural Resources and Conservation, rural fire assistance money is distributed to all counties within the MCFO. RFA funding supports local entities for equipment, education and training purposes. From 2001 to 2004 the MCFO has distributed funding to 16 different counties in eastern Montana in the amount totaling $911,973.46.

MCFO is actively partnering with other federal, state and local agencies when conducting firewise workshops in eastern Montana.

a. Prevention Programs

MCFO presents numerous prevention programs to local schools, charity fundraisers, fairs and other local communities' special events.

b. Special Orders and Closures

Wildland fire restrictions and closures are implemented in conjunction with other federal, state and local governments. MCFO implements and disseminates fire restriction and closure information.

c. Industrial Operations and Fire Precautions

Eastern Montana is primarily farming and ranching communities, with few industrial operations.

4. Annual Fire Training Activities

A MCFO Wildland Fire Management Training Plan has been developed (Appendix F). For zone wide and field office implementation. The plan addresses employee orientation requirements and training. Staffing decisions and developmental opportunities are based on the zone mission, strategic plans and budgets.

a. Qualifications and Certification

All personnel with fire program responsibilities will meet established agency competencies and associated qualifications, as identified in the Wildland and Prescribed Fire Qualification Systems Guide (PMS 310-1) National Wildland Fire Coordination Group (NWCG) 2000; BLM Manual 9214 Fire Training and Qualifications; the Interagency Standards for Fire and Fire Aviation Operations (USDI 2000); and the Interagency Fire Program Management Standards and Guide.

To ensure that employees have the opportunity to master skills and competencies, the zone supports on-the-job developmental opportunities for their employees. Developmental activities include job shadowing, coaching and mentoring, and are accomplished by allowing employees to participate in special projects, and as trainees on fire assignments and details.

Qualifications and training certification is the responsibility of the local Red Card and Qualifications committee. This committee has a working understanding of qualification standards that is comprised of fire management staff or a combination of fire management staff and local resource staff. The Agency Administrators supports wildland fire operations by allowing employees within the field offices to participate in support and suppression roles.

b. Fire Season Readiness

Requirements for preparedness can be found in the Interagency Standards for Fire and Fire Aviation Management 2004. Operational plans are located in the Miles City Interagency Dispatch Center.

5. Detection

Detection flights are ordered through the Miles City Interagency Dispatch Center. There are three lookouts located on the Ashland Ranger District that provide detection for the forest and surrounding BLM lands. The lookouts are Poker Jim, Diamond Butte, and Liscom Butte. Currently because of the age, health and safety standards of the lookouts only Poker Jim is staffed.

6. Fire Weather and Fire Danger

Seven Remote Automated Weather System (RAWS) stations located in the MCFO are listed in the following page.

Table 20. Location of Remote Automated Weather System (Stations) in MCFO

Station Name	NWS Station I.D.	Location (County)	Latitude*	Longitude*
Knowlton	244102	Prairie	46:18:26	105:01:47
Curry Coulee	242405	Garfield	47:23:14	107:43:52
South Sawmill Creek	242403	Garfield	47:33:43	107:31:43
Pine Hill	244201	Wibaux	46:46:33	104:43:47
Big Sheep Mountain	244002	Prairie	47:01:42	105:48:17
Bradshaw Creek	245203	Powder River	45:03:19	105:56:54
Fort Howes	245201	Powder River	45:17:49	106:09:41

*degrees, minutes, seconds (dms)

The Fire Danger Rating Plan is currently being rewritten and will be completed prior to the start of the 2005 fire season.

7. Aviation Management

The aviation program within the MCFO is primarily utilized for fire management activities. Aviation services are also used by resource specialists in support of resource management activities. The zone plans are updated annually. The Unit Aviation Manager (UAM) has been delegated aviation program oversight by the Fire Management Officer (FMO). All tactical, logistical and non-fire aircraft procurement and movement are coordinated by the UAM and authorized by the FMO. The following are a list of MCFO fixed and rotor winged bases.

Table 21. Location of MCFO Fixed and Rotor Winged Bases

Base Name	Types of Aircraft	Latitude*	Longitude*
Ashland	Rotor Winged	45 35.60	106 15.19
Baker	Fixed Winged	46 21.86	104 15.57
Broadus	Fixed and Rotor Winged	45 26.00	105 25.03
Bridger	Rotor Winged	45 17.50	108 55.54
Camp Crook	Rotor Winged	45 32.40	103 59.30
Colstrip	Fixed and Rotor Winged	45 51.17	106 42.56
Ekalaka	Fixed and Rotor Winged	45 52.68	104 32.25
Fort Howes	Rotor Winged	45 18.02	106 09.15
Jordan	Fixed and Rotor Winged	47 20.00	106 56.04
Miles City	Fixed and Rotor Winged	46 25.68	105 53.18

*decimal minutes

The MCFO has several annual exclusive use contracts. Two type 4 Single Engine Air Tankers (SEAT's) are contracted from July 1 to September 8. A type 4 Air Attack plane is contracted from July 3 to September 30. A type 3 helicopter is stationed at Fort Howes and contracted from June 17 to August 27.

The MCFO contracts numerous call when needed (CWN) and aircraft rental agreements (ARA) aircraft. The CWN aircraft have included SEAT's, air attack, recon planes, helicopters and smokejumper aircraft.

8. Initial Attack

All fires within the MCFO are managed consistent with the 9200 manual and the Interagency Standards for Fire and Fire Aviation Management 2004 handbook. The Miles City Interagency Dispatch Center dispatches resources to all confirmed fires as outlined in preplanned dispatch protocols. Strategies and tactics are in conformance with resource management objectives. Firefighter and public safety is the highest priority in any fire management activity. The following information is for use in determining initial attack priorities

FMU within the field office are ranked in priority. The following is the priority table:

Table 22. Priority Ranking for MCFO FMUs

FMU	Rationale for Ranking
Rural Interface	Density of structures and local communities
Ashland Ranger District	Density of structures, local communities and high recreational use
Knowlton-Locate	Density of structures, local communities and high recreational use
Sioux Ranger District	Density of structures and high recreational use
Mixed Grass Prairie Sagebrush	Dense pockets of structures, local communities and dispersed recreational use, gas and oil development and grazing
Vicinity of the Custer National Forest	Local communities and dispersed recreational use, gas and oil development and grazing
Missouri-Musselshell River Breaks	Dense pockets of structures, and dispersed recreational use
Cedar Breaks	dispersed recreational use and grazing

MCFO has five fire stations located throughout eastern Montana. Initial attack ground forces are assigned to these stations. The table below provides a list of fire stations and fire suppression resources available.

Table 23. Location of MCFO Fire Stations and Number of Resources

Station	Location	Latitude Longitude	Equipment	Personnel
Miles City	Miles City	46 23.46 105 51.47	1 Type 6 Engines	10
			2 Type 4 Engine	5
			1 Type 2 Water Tender	1
Fort Howes	Ashland	45 18.00 106 09.00	3 Type 6 Engines	15
Jordan	Jordan	47 19.59 106 56.02	1 Type 6 Engine	5
Ekalaka	Ekalaka	45 53.03 104 32.38	1 Type 6 Engine	5
Camp Crook	Camp Crook	45 32.24 103 59.17	1 Type 6 Engine	5

9. Extended Attack and Large Fire Suppression

When complexity levels exceed initial attack capabilities, the appropriate Incident Command System (ICS) positions are added to the command staff, commensurate with the complexity of the incident.

10. Other Fire Suppression Considerations

Fire trespass issues, cooperative agreements and interagency agreements are maintained at the Miles City Interagency Dispatch Center.

B. Wildland Fire Use (WFU)

1. Description of WFU Opportunities

There are several WSAs located throughout the MCFO. (See the table below and refer to the FMU for a description.) Currently there is no direction provided in the Powder River or Big Dry RMP's which addresses a Wilderness Fire Implementation Plan. Handbook H-8550-1 states that fire management activities will not cause unnecessary impairment to WSAs.

Table 24. WSAs Located Within the MCFO

WSA	FMU	Location	Latitude*	Longitude*
Terry Badlands	Mixed Grass Prairie Sagebrush	Prairie County	46 46.50	105 30.02
Buffalo Creek	Vicinity of Custer National Forest	Powder River County	45 04.49	105 48.29
Zook Creek	Vicinity of Custer National Forest	Rosebud County	45 21.42	106 34.28
Billy Creek	Missouri-Musselshell River Breaks	Garfield County	47 41.50	107 20.22
Bridge Coulee	Missouri-Musselshell River Breaks	Garfield County	47 14.10	107 54.38
Musselshell River Breaks	Missouri-Musselshell River Breaks	Garfield County	47 06.20	107 54.03
Seven Blackfoot	Missouri-Musselshell River Breaks	Garfield County	47 38.07	107 25.30

* Latitude and longitude are centroid map delineations.

2. Preplanned Implementation Procedures

There are no implementation procedures identified in the Powder River or Big Dry RMPs for WFU.

3. Initial Action Procedures

There are no initial actions procedures identified in the Powder River or Big Dry Resource Management Plans for WFU.

4. Required Personnel

There are no required personnel identified in this plan.

5. Public Information

There are no WFU areas identified in the Powder River or Big Dry RMPs.

C. Prescribed Fire

1. Planning and documentation

a. Summarize the Units Program

This FMP is the program strategy document for prescribed fire activities. It captures and quantifies the overall needs of the MCFO. Prescribed fire activities are a coordinated interdisciplinary effort supported by resource and fire management. All benefiting program staff will coordinate their respective roles for the planning, implementation,

monitoring, evaluation, reporting and funding of prescribed fire projects. The prescribed fire program is supported by BLM planning documents and the appropriate environmental analysis, and is implemented in accordance with BLM manual sections 9214 and 9211 (USDI 2000).

Fuels Management projects are developed under the following prioritization strategy: (1) WUI areas, (2) high fire occurrence areas, and (3) ecosystem health. The RAMS program which is under development will further guide priority treatment areas.

Fuels treatment projects and timber management activities are guided by the Big Dry and Powder River RMPs. These RMPs have been amended by the Fire/Fuels Management Plan Environmental Assessment to allow for timber management, fuels management, and prescribed fire. (See the table of FMUs for list of projects and areas including acreages in Appendix F.)

Contractors will be used to implement three fuels projects in fiscal year 2005. Contractors have also been used to provide wildlife and cultural surveys. The MCFO anticipates continual use of contractors for data collection, project and document development.

Total number of acres treated in Condition Class 2 and moved to Condition Class 1 is unknown. The MCFO staff has completed FRCC training and is implementing the training in project development and implementation.

A monitoring plan is being developed to develop procedures for monitoring of fuels projects. Current procedures involve the use of pre- and post burn plots and photos. Additionally, Joint Fire Science funded research is being conducted to validate burn prescriptions and mechanical treatments, develop fuel loading criteria (photo series) and evaluate long term effects of fire.

Fuels treatment maps showing past and current projects reside in the MCFO Graphic Information System (GIS) files.

2. Air Quality and Smoke Management

a. Air Quality

There are no identified air quality issues in the MCFO. All burning is conducted under the regulations and permitting of the Montana/Idaho Airshed Management Group. Permits for burning are applied for biannually. The Miles City Interagency Dispatch Center Manager serves as the local airshed coordinator for all open burning in airshed 10.

b. Smoke Emissions

Smoke emissions from prescribed burns are managed through the use of spot weather forecasts. Burning is conducted under favorable smoke dispersion conditions.

No smoke sensitive areas other than the Type I airsheds in Northern Cheyenne and Fort Peck Indian reservations are known. Prior to each prescribed burn efforts are made to identify any local air quality concerns and local residents with respiratory problems.

Residents are contacted and any residents with respiratory concerns are offered the option for lodging during the duration of smoke emissions in a non impacted environment.

D. Non-fire Fuels Treatments

The MCFO continues to plan and implement mechanical, chemical, seeding and biological treatment projects that integrate multiple land use plans (LUPs) resource goals. Integrated non-fire fuels project components include: restoring desired plant communities, creating biological diversity, rejuvenating decadent vegetation, protecting recreational areas, removing noxious and invasive plant species, and removing biomass that modifies fire behavior. Projects located within or near the WUI are the highest priorities, regardless of which FMU the projects are located.

E. Emergency Stabilization and Rehabilitation

The MCFO does not have a Normal Fire Rehabilitation Plan in place. The MCFO follows BLM guidance found in the Emergency Fire Rehabilitation Handbook, H-1742-1. The annual workload associated with ESR is based on the existing fire history of the MCFO.

F. Community Protection/Community Assistance

Within the MCFO there are 13 federal listed communities at risk. Currently there are no protection plans in place; however, several counties have protection plans in draft form. There are five counties that are very active in fire prevention programs and some of those counties have started risk mitigations projects, none of the projects are complete.

V. Organization and Budget

A. Workforce and Equipment Identification

The MCFO FMP is the basis for funding allocations and this document addresses all aspects of the fire management program

Under the organization described in the preferred alternative of the most recent National Fire Management Analysis System (NFMAS) analysis (June 1999), the MCFO zoned fire staff requires the following staff, equipment, and funding to accomplish the program goals and objectives:

Table 25. MCFO Fire Zone Requirements for Program Goals and Objectives

Resource	Current Staffing*	Desired Staffing*	Normal Activation	Sub Activity	Cost ($) Current	Cost ($) Proposed
FMO	1	1	Yearly	2810	70,400	TBD
AFMO	2	2	Yearly	2810	117,500	TBD
Center Manager	1	1	Yearly	2810	48,500	TBD
Asst. Center Manager	0	1	Yearly	2810		TBD
Aviation Dispatcher	1	1	Yearly	2810	35,750	TBD
I.A. Dispatchers (CS)	2	2	April-Sept	2810	35,750	TBD
I.A. Dispatchers (Temp)	2	2	April-Sept	2810	25,508	TBD
Fuels Manager	1	1	Yearly	2823/2824	67,394	TBD
Fuels Specialists	2	2	Yearly	2823/2824	117,504	TBD
Forestry Tech-Term or Career Seasonal	1	1	Yearly	2823/2824	44,000	TBD
Mitigation/Education Specialist	1	1	Yearly	2810 2824	29,376 29,376	TBD
Training Coordinator	1	1	Yearly	2810	58,752	TBD
FOS	4	5	Yearly	2810	235,008	TBD
Cache Manager	1	1	May-Oct	2810	44,064	TBD
SEAT Manager	2	2	May-Oct	2810	78,336	TBD
Helitack	6	6	May-Sept	2810	115,000	TBD
Helicopter Supervisor	1	1	Yearly	2810	48,500	TBD
Career Seasonals (Engine, Helitack)	27	27	April-Sept	2810	688,500	TBD
Temporary Employees (Engine, Helitack)	61	61	June-Sept	2810	1,037,000	TBD
Other Fire Staff (Admin, Resources)	21	21	May-Oct	2810/2823/ 2824	34,000	TBD
Contracting Officer Representative, Project Inspector (RX fire, mechanical, checmical, biological)	0	5	Yearly	2810/2823/ 2824		TBD
Burn Boss, RXB2	0	4	May-Nov	2823/2824		TBD
Burn Boss, RXB1	0	2	May-Nov	2823/2824		TBD
Ignition Specialists	0	10	May-Nov	2823/2824		TBD
Fire Effects Monitors	0	5	May-Nov	2823/2824		TBD
Helicopter H3	1	1	June-Sept	2810	333,733	TBD
Air Tankers Type III	2	2	June-Sept	2810	209,693	TBD
Type 4-Engine	2	2	May-Oct	2810	200,343	TBD
Type 6-Engine	10	10	May-Oct	2810	856,516	TBD
½ Ton 4x4 Pickup truck	5	2	Yearly	2810/2824	16,000	TBD
¾ Ton 4x4 Pickup/SUV	22	21	April-Oct	2810/2824	88,000	TBD
Crew Carrier Truck	1	1	Yearly	2823/2824	3,500	TBD
Helitack Support Truck	1	1	Yearly	2810	2,500	TBD
Forklift	1	1	Yearly	2810	200	TBD
1 Ton 4x4 Pickup Truck	1	1	Yearly	2823/2824 2810	3,500	TBD
Water Tender	1	1	May-Oct	2810	46,557	TBD
Terra Torch	1	1	Yearly	2823/2824	15,000	TBD
ATVs	4	4	Yearly	2810/2823/ 2824	25,000	TBD
Aerial Ignition Device/Sphere Dispenser	2	2	Yearly	2823/2824	20,000	TBD
ATV Trailer	1	1	Yearly	2823/2824	3,000	TBD

*All requests based on NFMAS mdb information (1999). NYR is based on resource objectives.

The MCFO fire management program provides suppression (initial and extended attack), investigation, prevention and education, and fuels management services for public lands. National support is provided when requested resources or personnel are available.

The supporting budget for the MCFO includes:

- Administrative support - $282,975
- 100 person fire cache - $5,616
- Computers and telephones, facilities maintenance, utilities - $45,945

For all fire related sub-activities, personnel, equipment counts and locations, and conformance to State FMO Guidance Formula are included in the MCFO IIAA tables 1 through 6a in Appendix G. Specific details may be found within the Interagency Initial Attack Assessment (IIAA) Database (mdb) for the MCFO, selected alternative A-13 which meets most efficient level (MEL) also known as normal year readiness (NYR).

Fire occurrence for the MCFO can be found in the PCHA analysis 2003 (Appendix E). Workload has been determined to be an average of 95.1 Lightning caused wildland fires and 8.7 human caused wildland fires for a total average of 103.8 fires per year in the MCFO. Annual fire season is determined to be from April 15 to October 15. The staffing level guides are outlined in the Fire Operations Plan at MCFO.

B. Assistance Agreements and Intra/Interagency Agreements

Fire suppression is managed by the agency/entity responsible for fire protection of the lands on which the fire occurs. The interagency agreement for fire management states "that among the Federal Wildland Fire Management Agencies, the Interagency Agreement for Fire Management provides the framework and authority for cooperative arrangements for initial attack efforts by fire suppression forces that can arrive at a fire first, regardless of agency ownership." A federal agency performing the initial attack will notify the agency that is responsible for the land as soon as ownership is determined, and will continue suppression pursuant to the procedures outlined in the Federal National Interagency Mobilization Guide. Agreements with state, local and non-profit entities provide for mutual or reciprocal fire protection assistance and are available at the Miles City Interagency Dispatch Center.

C. Equipment Rental Agreements

For a copy of all equipment rental agreements see the service and supply plan at the Miles City Interagency Dispatch Center and the indefinite delivery indefinite quantity (IDIQ) contracts on the Montana/Dakota BLM homepage.

D. Contract Suppression and Prescribed Fire Resources

The MCFO has emergency equipment rental agreements (EERAs) for suppression with several local private and county entities. Agreements are available at the Miles City Interagency Fire Dispatch in the service and supply plan.

VI. Monitoring and Evaluation

The MCFO FMP is a reference for wildland fire management and hazardous fuels treatments within the MCFO. It will be reviewed and revised annually in conformance with LUP guidance. The review will ensure that the fire program is being implemented in a safe, cost effective manner. When National wildland fire performance measures are issued, monitoring and evaluation protocols will be developed.

GLOSSARY

affected environment - The natural environment that exists at the present time in an area being analyzed.

aircraft rental agreement - Obtains aircraft for aerial missions under operational control of the BLM. The DOI-Aviation Management Directorate regionally administrates aircraft rental agreements for type III helicopters and fixed wing aircraft. There is a web based source list maintained by Aviation Management Directorate and typically this procurement mechanism is for short time duration and may be ordered direct by the local dispatch unit to the vendor.

animal unit month - A standardized unit of measurement of the amount of forage necessary for the complete sustenance of one animal for one month; also, the measurement of the privilege of grazing one animal for one month.

annual work plan - Written plan which delineates specific functions which must be accomplished by specific deadlines, who is responsible for accomplishing how the task will be completed and what is needed to complete the task.

appropriate management response - Specific actions taken in response to a wildland fire to implement protection and/or fire use objectives. It allows managers to utilize a full range of responses. It does not lock tactical options to fire type designations. As conditions change, the particular response can change to accomplish the same objective.

area of critical environmental concern - An area which needs special management attention to preserve historic, cultural, or scenic values; to protect fish and wildlife resources or other natural systems or processes; or to protect life and provide safety from natural hazards.

aspect - The direction a slope faces.

big game - Are large mammals, such as deer, elk, and antelope that are hunted for sport.

biological diversity - The number and abundance of species found within a common environment. This includes the variety of genes, species, ecosystems, and the ecological processes that connect everything in a common environment.

biological treatment - The use of animals, (e.g. sheep and goats) and insects to control noxious weeds.

browse - Twigs, leaves, and young shoots of trees and shrubs that animals eat. Browse is often used to refer to the shrubs eaten by big game, such as elk and deer.

budget – For IIAA budget analysis purposes, the budget consists of those funds which are (or would be) allocated to the planning unit to cover the costs of the units planned Presuppression/initial attack fire management organization that is analyzed. Funds that are used to pay fire's share of indirect overhead and administrative costs should be included.

call when needed (CWN) - A contract used to obtain aircraft for aerial missions under operational control of the BLM The DOI-Aviation Management Directorate nationally administrates CWN contracts for type I and II helicopters as well as Single Engine Air Tankers. Vendors are not required to respond unless they accept an offer to provide services and the government may release the aircraft as needed.

canopy - The part of any stand of trees represented by the tree crowns. It usually refers to the uppermost layer of foliage, but it can be use to describe lower layers in a multistoried forest.

categorical exclusion - A category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a federal agency in implementation of these regulations, and neither an environmental assessment or an environmental impact statement is required.

Category 1 - substantial biological information on file to support the appropriateness of proposing to list as endangered or threatened.

Category 2 - current information indicates that proposing to list as endangered or threatened is possibly appropriate, but substantial biological information is not on file to support an immediate ruling (U.S. Fish and Wildlife Service).

chemical treatment -The use of pesticides and herbicides to control pests and undesirable plant species.

Clean Air Act - A federal law enacted to ensure that air quality standards are attained and maintained. Initially passed by Congress in 1963, it has been amended several times.

condition class– Condition classes are a function of the degree of departure from historical fire regimes resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, and canopy closure. One or more of the following activities may have caused this departure: fire exclusion, timber harvesting, grazing, introduction and establishment of exotic plant species, insects and disease (introduced or native), or other past management activities.

Class I - The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. It also would not preclude those activities specifically authorized by the Wilderness Act of 1964 and described in BLM Manual H-8550-1. This is an interim classification until Congress determines which areas is wilderness. Lands designated as wilderness by Congress would continue to be managed under Class I objectives. Lands not designated wilderness would be managed under VRM Class II objectives.

Class II - The objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominate natural features of the characteristic landscape.

Class III - The objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer.

Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV - The objective is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

contiguous - Continuous, generally used to describe areas of land.

cooperator – In IIAA it is any fire agency, fire department, commercial or other entity that provides initial attack forces to the Planning Unit for dispatch on a planned basis.

cultural resource - The remains of sites, structures, or objects used by people in the past; this can be historical or pre-historic.

default FIL – The lowest Fire Intensity Level at which an initial attack unit will be used (dispatched) by the IIAA under a program option which uses the default FIL dispatch mode. The default FIL may be assigned as a default for all units of a **Producer Type**, or individually set for units on the **Edit Line Item** form.

density - Number of trees in an area, generally measured as trees per acre.

disturbance - Any event, such as forest fire or insect infestations that alter the structure, composition, or functions of an ecosystem.

ecosystem - An arrangement of living and non-living things and the forces that move among them. Living things include plants and animals. Non-living parts of ecosystems may be rocks and minerals. Weather and wildfire are two of the forces that act within ecosystems.

Emergency stabilization and rehabilitation (ESR) – Emergency stabilization actions are initiated within one year of a fire to stabilize and prevent unacceptable damage of natural and cultural resources, minimize threats to life and property resulting from the affects of a fire, and repair/replace/construct physical improvements necessary to prevent degradation of land or resources. Rehabilitation actions are taken within three years of the fire to repair or improve lands that are unlikely to recover to a management-approved condition, and repair or replace minor facilities damaged by fire.

encroachment - The progression of trees from forested areas into grassland or shrub land.

endangered species - A plant or animal that is in danger of extinction throughout all or a significant portion of its range. Endangered species are identified by the Secretary of the Interior in accordance with the Endangered Species Act of 1973.

Environmental Assessment (EA) - A record of the environmental factors involved in a land management action.

Environmental Impact Statement (EIS) - An analysis of site-specific BLM activities used to determine whether such activities have a significant effect on the quality of the human environment, and whether a formal environmental impact statement is required.

exclusive use – A contracts for aircraft services that are solicited and awarded by DOI-Aviation Management Directorate nationally for the BLM for a specific time period (e.g. 30-day, 90-day, etc.).

extended attack - A wildland fire that has not been contained or controlled by initial attack forces and for which more firefighting resources are arriving or being ordered by the initial attack incident commander. Extended attack implies that the complexity level of the incident will increase beyond the capabilities of initial attack incident command.

fauna - The animal life of an area.

Fire Behavior Prediction Models (FBPS) - A set of mathematical equations that can be used to predict certain aspects of fire behavior when provided with an assessment of fuel and environmental conditions.

fire cycle - The average time between fires in a given area.

fire intensity level - A measure of fire behavior used in IIAA (A NFMAS term). It is based on the calculated flame length, where FIL 1 is 0-2 feet, FIL 2 is 2-4 feet, FIL 3 is 4-6 feet, FIL 4 is 6-8 feet, FIL 5 is 8-12 feet and FIL 6 is greater than 12 feet. The NFDRS Burning Index (BI) is the indicator for the fire danger for dispatching and is used to categorize rate of spread and to assess fire effects. **FIL=BI/10**

fire management - The integration of knowledge of fire protection, prescribed fire, and fire ecology into multiple use plans, decision making, and land management activities. Fire management places fire in perspective with overall land management objectives.

fire management plan (FMP) - Activity plans developed to support and accomplish resource management objectives and applicable land-use decisions authorized in BLM resource management plans. It contains an economic analysis, establishes the basic direction for fire management, identifies priorities for execution, and determines levels of fire resources (personnel, engines, aircraft, and facilities).

fire management unit (FMU) - Any land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, major fire regimes groups that set it apart from the management characteristics of an adjacent FMU. Fire Management Units are scaleable, and cannot be separated geographically. The FMU's may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives. The development of FMU's should avoid redundancy. Each FMU should be unique as evidenced by management strategies, objectives and attributes.

fire planning unit (FPU) - Describes the geographic planning area. It can include a single or multiple land use plan planning area(s), cross jurisdictional boundaries including adjacent

BLM office lands, and/or other partner lands. The FPU will be a key component of the new Fire Program Analysis (FPA) software program.

Fire Regime Condition Class (FRCC) - Classes of fire regimes grouped by categories of frequency (expressed as mean fire return interval) and severity. Refers specifically to five groups used in federal policy and planning: 0-35 years, low severity; 0-35 years, stand replacement; 35-100 years, mixed severity; 35-100 years, stand replacement; 200+ years, stand replacement.

fire regime- The characteristics of fire in a given ecosystem, such as the frequency, predictability, intensity, and seasonality of fire.

fire use - The management of naturally ignited wildland fire to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in approved Fire Management Plans.

fire-adapted – Evolved strategies that allow populations to be maintained on sites where fires commonly occurred.

flora - The plant life of an area.

forage - All browse and non-woody plants that are eaten by wildlife and livestock.

forb - A broadleaf plant that has little or no woody material in it.

fuel – The combustible plant material, both living and dead that is capable of burning in a wildland fire situation.

fuel break – A zone in which fuel quantity has been reduced or altered to provide a position for suppression forces to make a stand against wildfire. Used for suppression safety and fire behavior modification. Fuel breaks may consist of one or a combination of the following: Natural barriers, constructed fuel breaks, manmade barriers. The effectiveness of fuel breaks is improved when strategically located adjacent to areas containing low fuel accumulation (Tons/Acre). In the long-term fuel breaks are more effective when managed to maintain a low fuel loading. Tools used for fuel break maintenance include mechanical treatment, prescribed burning, and grazing.

fuel model (FM) - Simulated fuel complex for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

fuels management - The treatment of fuels that would otherwise interfere with effective fire management or control. For instance, prescribed fire can reduce the amount of fuels that accumulate on the forest floor before the fuels become so heavy that a natural wildfire in the area would be explosive and impossible to control.

fuels treatment - The rearrangement or disposal of natural or activity fuels to reduce fire hazard.

Geographical Information System (GIS) - Specific actions taken in response to a wildland fire to implement protection and fire use objectives. Formerly known as the appropriate suppression response which consisted of the confine, contain, and control tactical strategies**.** (NWCG terminology adopted 06/12/97) OR Computer program which consists of lays of files of data which describe components of landscape. The information can be reproduced on a map.

habitat - A place where a plant or animal naturally or normally lives or grows.

historic fire regime (HFR) – Periodicity and pattern of naturally occurring fires in a particular area or vegetative type, described in terms of frequency, biological severity, and area of extent.

initial attack - For the purpose of NFMAS IIAA budget analysis, initial attack is defined as the suppression action that is carried out exclusively by the forces that arte planned and used for action on initiating fires as included in the IIAA included items list.

ladder fuels - Vegetation located below the crown level of forest trees which can carry fire from the forest floor to tree crowns. Ladder fuels may be low-growing tree branches, shrubs, or smaller trees.

landscape - An area composed of interacting and inter-connected ecosystems that are repeated because of the geology, landform, soils, climate, biota, and human influences through the area. A landscape is composed of watersheds and smaller ecosystems.

large fire - A fire burning more than a specified are of land e.g., 300 acres. A fire burning with a size and intensity such that is behavior is determined by interaction between its own convention column and weather conditions above the surface.

Management Information System (MIS) - BLM workload measures web based, uses designations of specific tasks to track field office work loads and accomplishments.

mechanical treatment - Treatment of an area by mechanical means, such as contour furrowing, pitting, plowing and seeding, chiseling, scalping, and water spreading.

minimum impact suppression tactics (MIST) – The concept of MIST is to use the minimum amount of force necessary to achieve wildland fire management protection objectives, consistent with land and resource management objective (USDA 1993).

mitigation - Actions taken to avoid, minimize, or rectify impacts of a land management practice; reducing or eliminating the impact by preservation and maintenance operations.

mosaic - Areas with a variety of plant communities over a landscape, such as areas with trees and areas without trees occurring over a landscape.

most efficient level (MEL) - The fire program (budget and associated program option) that will result in the expected minimum cost + net resource value change. Conceptually, this is the most efficient funding level for the planning unit, and any increase in budget beyond

MEL will have a negative benefit-cost ratio; that is the return in reduced suppression costs and resource losses will not offset the budget increase.

multi-story - A vertical arrangement of 3 or more canopy layers within the same area.

National Environmental Policy Act (NEPA) – Congress passed NEPA in 1969 to encourage productive and enjoyable harmony between people and their environment. One of the major tenets of NEPA is its emphasis on public disclosure of possible environmental effects of any major action on public lands.

National Fire Danger Rating System (NFDRS) - A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

National Fire Management Analysis System (NFMAS) - The analysis process which systematically evaluates fire management programs based on an economic efficiency criterion. NFMAS uses a simulation model to estimate the performance over time of existing and proposed local initial attack organizations and other fire-related activities such as prevention and fuels management. Budget cost, variable suppression costs, and economic consequences of fire on planned resource outputs are all considered in making the efficiency estimate.

National Fire Plan - A planning document that directs the actions of USDA Forest Service and Departments of the Interior agencies in preparing for wildland fires and reduce their impacts on people and resources. The National Fire Plan is based on the five key points of firefighting, rehabilitation and restoration, hazardous fuel reduction, community assistance, and accountability.

National Fire Plan Operations Reporting System (NFPORS) - Web based data system used by federal agencies to list unit projects, project status and general costs.

National Forest Lands - Public lands, generally forest, range, or other wildland, administered by the Forest Service, USDA.

National Historic Preservation Act (NHPA) - The federal law which requires agencies to identify item of cultural and historical significance. An act to establish a program for the preservation of additional historic properties throughout the nation, and for other purposes.

normal year readiness (NYR) - Approximate annual date when individual management units plan to be fire ready. Identified in annual work plan.

noxious weed - According to the Federal Noxious Weed Act (PL 93-629), a weed that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agriculture and commerce of the United States and to the public health. Identified by designation in Montana.

overstory - The upper canopy layer; the plants below comprise the understory.

Personal Computer Historical Analysis (PCHA) - A personal computer program for processing historical daily weather observation and individual fire report data to produce fire behavior and fire occurrence data for the IIAA.

permitted grazing - Grazing on public lands under the terms of a grazing permit.

precommercial thinning - A felling made in an immature stand to improve the average form of the trees that remain.

prescribed fire - Application of fire (by planned or unplanned ignitions) to fuels in either their natural or modified state, under specified conditions to allow the fire to burn in a predetermined area while producing the fire behavior required to achieve certain management objectives.

prescription - Management practices to accomplish specific land and resource management objectives.

prevention – Activities directed at reducing the number of person-caused fires, including public education, law enforcement, dissemination of information, and the reduction of hazards.

properly function condition (PFC) - Used to describe a vegetation population such as a stand of trees which is healthy and reproducing, and maintaining it.

public land - Land for which title and administration rests with the Bureau of Land Management (BLM).

Range Improvement Project System (RIPS) - Electronic database for recording all range improvement projects for BLM.

rangeland - Land on which the principle natural plant cover is composed of native grasses, forbs, and shrubs that are valuable as forage for livestock and big game.

record of decision (ROD) - Agency administrators select an alternative that best implements the objectives and constraints for the management of the area.

Remote Automatic Weather System (RAWS) - A weather information management system satellite station that automatically tracks and stores weather information.

rights-of-way - Public lands authorized to be used or occupied pursuant to a right-of-way grant.

riparian ecosystem - The ecosystems around or next to water areas that support unique vegetation and animal communities as a result of the influence of water.

Risk Assessment and Mitigation Strategies Plan (RAMS) – Computer based risk assessment and mitigation model. RAMS assists users in developing the optimum prevention and fuels programs and allows users to prioritize areas within their planning unit,

consider various prevention and/or fuels treatment alternatives and develop the related budgets.

stand replacement - When a stand has been totally modified by some disturbance (fire, insects, disease, logging), and needs to start, or be started, over.

standard landscape assessment - Method of determining characteristics which make up landscape. Means of describing a geographic, area uses GIS.

structure - How the parts of ecosystems are arranged, both horizontally and vertically. Structure might reveal a pattern, or mosaic, or total randomness of vegetation.

suppression - Any act taken to slow, stop, or extinguish a fire. Examples of suppression activities include fireline construction, backfiring, and application of water of chemical fire retardants.

temporary road -Temporary roads are used for a single, short-term use, i.e. to haul timber to developed roads, access to build water developments or conduct other administrative functions, etc.

threatened and endangered species - These species of plants or animals classified as threatened or endangered pursuant to section 4 of the Endangered Species Act. Any species which is in danger of extinction, or is likely to become so within the foreseeable future.

vegetation type - A plant community with distinguishable characteristics.

visual resource management (VRM)

VRM Class I areas (including all Wilderness and Wilderness Study Areas (WSAs) unless exempted in an RMP) – To preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

VRM Class II areas - Retaining the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.

VRM Class III areas – The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

VRM Class IV areas – To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the

view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements.

wilderness study area (WSA) – A WSA must be managed in a manner so as not to impair suitability for preservation and designation as wilderness. Within WSAs, fuels and vegetation treatment and wildland fire management activities should follow BLM Manual H-8550-1: *Interim Policy for Lands Under Wilderness Review* (USDI 1995).

wildland fire - Any wildland fire that is not a prescribed fire.

Wildland Fire Implementation Plan (WFIP) - A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits.

Wildland Fire Situation Analysis (WFSA). A decision making process in which the agency administrator or representative describes the situation, compares multiple strategic wildland fire management alternatives, evaluates the expected effects of the alternatives, establishes objectives and constraints for the management of the fire, selects the preferred alternative, and documents the decision.

wildland fire use - The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

wildland urban interface (WUI) - The line, area, or zone, where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuel.

woody draw - A classification of areas, particularly in grassland settings, where an overstory of woody vegetation in small drainages creates habitat for many wildlife species and shade/wind protection and forage for livestock. The vegetation is a result of higher moisture conditions than in the surrounding areas but surface water if any, running thru the areas is generally short term.

APPENDIX A

Authorities

Authorities for the development of the Miles City Field Office Fire Management Plan are listed below:

- Protection Act of September 20, 1922 (42 Stat. 857; U.S.C. 594).
- Taylor Grazing Act of June 28, 1934 (48 Stat. 1269; U.S.C. 315).
- Reciprocal Fire Protection Act of May 27, 1955(69 Stat. 66; 42 U.S.C. 1856, 1856a).
- Economy Act of June 30, 1932 (47 Stat. 417; 31 U.S.C. 686).
- The Federal Land Management and Policy Act of 1976 (FLPMA) (Public Law 94-579; 43 U.S.C. 1701).
- Disaster Relief Act, Section 417 (Public Law 93-288).
- Annual Appropriations Acts for the Department of the Interior.
- United States Department of the Interior Manual (910 DM 1.3).
- 1995 Federal Wildland Fire Management Policy.
- 2001 Updated Federal Wildland Fire Management Policy (1995 Federal Wildland Fire Management Policy Update).
- 1998 Departmental Manual 620 Chapter 1, Wildland Fire Management General Policy and Procedures.
- Appropriations Act for DOI and Related Agencies (Public Law 106-291).
- United States Code (31 U.S.C. 3711[a]).
- Code of Federal Regulations (4 CFR 2920.1-2, 9212.1, 9212.4, and 9239).
- National Historic Preservation Act of 1966 (NHPA) as amended (1992) (16 USC 470 et seq.).
- Reciprocal Fire Protection Act of 1955 (42 USC 1856(a)-(d).
- Wildfire Suppression Assistance Act of 1989 (42 USC 1856(m)-(o).

APPENDIX B

Fire Regime Condition Class for Miles City Field Office Fire Management Plan

The standard landscape method was applied to characterize Fire Regime Condition Class (FRCC) for all Fire Management Units (FMUs), per direction in the *Interagency Fire Regime Condition Class Guidebook* (Hann et al., 2002).

FRCC serves as an ecological measure which highlights the degree of departure among fire regime and vegetation variables. Condition Class 1 landscapes are those which have fire regimes and vegetation conditions within a natural range of variation for a given vegetation type. Condition Class 2 and 3 are broadly defined as landscapes with moderate and high departures, respectively. FRCC is a relevant component of fire management plans due to its ability to synthesize land health for FMUs and larger areas. In order for all agencies to consistently evaluate and report FRCC, an interagency working group has developed protocols and software to assist FRCC determination. The Standard Landscape Method software was applied to arrive at FRCC ratings for all vegetation types in each FMU (Hann et al., 2002).

The FRCC concept is hinged upon assigning the departure from historic vegetation communities, which are referred to as Potential Natural Vegetation Groups (PNVGs). PNVGs are defined as the plant assemblages that would be found prior to Euro-American settlement under the natural regime (Hann et al., 2002). The PNVGs which are found within the MCFO assessment area are shown in the following table.

The following tables highlight both the vegetation types and the FMUs with the highest departure, thereby providing an ecological context for the associated planned treatments or management decisions.

Table 24. Fire Regime Condition Class for Miles City Fire Management Plan

FMU	FMU Acres	PNVGs Present	Historic Fire Regime	Condition Class	% of FMU
Cedar Breaks	136,000	Juniper Steppe	III	II	30
		Ponderosa Pine	I	III	20
		Plains Grassland with Trees	I	II	50
Mixed-Grass Prairie Sagebrush	23,000,000	Plains Grassland with Trees	I	III	40
		Plains Grasslands with Shrubs	I	II	60
Rural Interface	200,000	Plains Grasslands with Shrubs	I	II	20
		Plains Grassland with Trees	I	II	25
		Ponderosa Pine	I	III	55
Vicinity of Custer National Forest	500,000	Ponderosa Pine	I	III	25
		Plains Grassland with Trees	I	II	75
Knowlton-Locate	36,200	Ponderosa Pine	I	III	70
		Plains Grassland with Trees	I	II	30
Missouri-Musselshell River Breaks	544,000	Ponderosa Pine	I	III	50
		Juniper-Pinyon	I	II	15
		Plains Grassland with Trees	I	II	25
		Plains Grasslands with Shrubs	I	II	10
Ashland Ranger District*					
Sioux Ranger District*					

* Incomplete data

Table 25. Summary of Fire Regime Condition Class by Vegetation Type

PNVG	Acres Condition Class 1	Acres Condition Class 2	Acres Condition Class 3
Ponderosa Pine	0	0	559,400
Plains Grassland with trees	0	14,439,800	0
Plains Grassland with shrubs	0	94,400	0
Juniper Steppe	0	40,800	0
Juniper-Pinyon	0	81,600	0
TOTAL	0	14,656,600	559,400

Appendix C

Management Constraints from the Fire/Fuels Management Environmental Assessment Plan Amendment for Miles City and the Dakotas

The following management constraints are taken from section 2.5.1.1 and 2.5.3.1 of the Fire/Fuels Management Environmental Assessment Plan Amendment for Miles City and the Dakotas (2003).

2.5.1.1 Protection measures common to both alternatives: These protection measures are based on existing policy, direction, law, and regulation. They are described here to emphasize the portions of policy that are relevant to this proposed action.

1. Air Quality: Prescribed fire will conform with the provisions of state regulations and implementation plans as specified in BLM manual section 9210-Fire Planning and (in Miles City) the Miles City Airshed Group Operating Guide
2. Cultural: Prior to implementing fire projects, the BLM will do an appropriate level of Native American consultation according to the guidance in BLM Manual 8160 and Handbook H-8160-1 to identify potential religious or cultural concerns.
3. Cultural: If Native American human remains are discovered on public lands during fire suppression, rehabilitation, or fuels reduction activities, the BLM will follow procedures identified in the Native American Graves Protection and Repatriation Act (NAGPRA) and 43 CFR part 10. If BLM fire suppression or reclamation activities extend onto private or state land, and burials are discovered, the provisions of the appropriate state burial law will be followed.
4. Cultural: The protective measures that guide the placement of dozer lines and other surface disturbing fire-related activities will be followed unless the authorized officer determines that due to adverse fire behavior, implementation of a particular measure is not feasible and prudent. In those cases, the measure may be waived or modified to address crucial safety issues, i.e., imminent threats to life and/or property. The SHPO will be notified if such measures are waived or modified in accordance with existing agreements or 36 CFR 800. Also, unless critical safety issues prevent a cultural resource inventory from being conducted, the provisions regarding post-fire cultural resource inventory cannot be waived or modified. If inventory is waived or modified by the authorized officer the SHPO will be consulted consistent with existing agreements or 36 CFR 800.
5. Special Status Species (SSS): Under BLM Special Status Species policy (BLM Manual 6840), BLM shall ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for listing a candidate or BLM sensitive species under the Endangered Species Act.
6. Threatened and Endangered Species: Areas of occupied and/or suitable habitat, important for species expansion and recovery, would be protected from adverse effects resulting from fire/fuels management related activities
7. Wilderness and Wilderness Study Areas (WSAs): Activities in wilderness areas and WSAs, including all fuels management activities, must not impair wilderness values. Inclusion of a WSA in a polygon does not automatically enable all types of treatments and prescribed burning associated with the category to be completed within the WSA. Treatment will not impair, and will in fact enhance, wilderness values. Minimum Tool and Minimum Requirement concepts must be reviewed

8. Visual: In order to ensure that the objectives of each visual resource management class is met, contrast ratings are required for all major projects (prescribed burning, mechanical and chemical pre-treatments) on public lands that fall within VRM Classes I and II, and Class III areas which have high sensitivity levels. Actions must not exceed the VRM objectives established for the management class.

2.5.3.1 Direction for fire management (including both fire suppression and fuels management) to protect other resource values: The following direction would be used when developing and updating field office fire management plans, when responding to wildland fires, and when developing site-specific fuels projects. This direction would not be mandatory during wildland fire suppression if using it would compromise protection of life or property.

9. Aquatic Species (including Special Status Species) and Habitat

Fuels Management

- To provide additional protection of aquatic species beyond Streamside Management Zone (SMZ) boundaries, **Riparian Protection Zones** (RPZs) would be identified to protect the following specific key ecological functions:
  - **water quality**, to a degree that provides for stable and productive riparian and aquatic ecosystems;
  - **stream channel integrity**, channel processes, and the sediment regime (including the elements of timing, volume, and character of sediment input and transport) under which the riparian and aquatic ecosystems developed;
  - **in stream flows** to support healthy riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route flood discharges;
  - **natural timing and variability** of the water table elevation in meadows and wetlands.
  - **diversity and productivity** of native and desired non-native plant communities in riparian zones.
- The width necessary to protect stream and riparian area structure and function should be determined from watershed and site-specific analysis. Interim RPZ boundaries described below should be considered default boundaries until final boundaries are determined by watershed or site-specific analysis. Final RPZ boundaries may be narrower or wider, depending on local conditions and results of the project specific analysis.
- Interim RPZ boundaries within forested zones would be:
  - Streams, ponds, lakes containing Special Status Fish Species: two site-potential tree heights
  - Other fish-bearing streams: one site-potential tree height
  - Ponds, lakes, and wetlands greater than 1 acre: the RPZ consists of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or to a distance equal to one site-potential tree height (whichever is greatest)
- Interim RPZ boundaries for non-forested rangeland ecosystems would consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or (in segments where trees are present) to a distance equal to one site-potential tree height (whichever is greatest).
- Fuels treatments could occur within these RPZs; however, riparian values would receive primary management emphasis during fuels treatments.

- All proposed fuels treatments within RPZs should analyze particular risk from wildfire and fuels management projects to isolated, depressed populations in degraded habitats without access to local or regional refugia. Proposed treatments should incorporate specific design features to avoid any further degradation of habitat.
- If RPZ boundaries are narrower than SMZ boundaries, fuels treatments would still comply with applicable state laws and Water Quality/Forestry Best Management Practices that BLM has adopted.

The following **conservation measures** would be applied to protect Threatened and Endangered fishes:

10. Pallid Sturgeon (Endangered)
    - No aerial retardant should be applied within 300 feet of the Yellowstone River below the mouth of the Powder River or within 300 feet of the Upper Missouri River (above Fort Peck Dam).
    - Restrict livestock grazing of riparian vegetation, especially cottonwood stands along the Upper Missouri River (above Fort Peck Dam), and Yellowstone River below the mouth of the Powder River, where that vegetation has been recently affected by fire or other catastrophic events (blowdown, ice shear, flood etc.) until successful regeneration of vegetative components occurs.

11. Bull Trout (Threatened)
    - Projects shall be designed using the guidance set forth in the "Interim Bull Trout Habitat Conservation Strategy."

Cultural and Paleontological Guidance
Fire Suppression

12. The appropriate BLM archaeologist, paleontologist, or cultural resource program lead would recommend the following guidance for each fire as appropriate:
13. Fire suppression tactics would limit surface disturbance to protect cultural resource values in designated cultural Areas of Critical Environmental Concern (ACEC), archeological districts, and other areas known or suspected to contain cultural resources, including historic structures and features. Use of earth moving/tillage equipment should be avoided for wildland fire suppression in areas with special designations to protect cultural resources and values, archeological districts, and other areas known to possess cultural resources. The use of heavy equipment and off-road vehicles should be limited to existing roads and trails within these areas during rehabilitation.
14. The aerial application of fire retardant would be restricted over areas that contain petroglyphs and pictographs.
15. Fire camps and fire staging areas should be placed outside and sufficiently distant from known or identified cultural resources. Use of off-road motorized vehicles outside of fire camp and staging areas should be avoided to prevent inadvertent impacts to cultural resources.
16. An intensive cultural resource inventory (Class III) as described in BLM Manual 8110 should be completed on areas disturbed by suppression activities, e.g., fire lines, fire camp areas, and staging areas before starting rehabilitation. Cultural resources discovered in or near disturbed areas should be protected from further damage during rehabilitation. Where cultural resources have been disturbed by suppression activities stabilization work

may be implemented. This may entail a careful return of the berm over the site, seeding, or covering the site with protective mesh and culturally sterile material. These emergency actions should be considered on a case-by-case basis at the discretion of the archaeologist assigned to the fire. Consultation with the SHPO would be done in accordance with existing agreements or 36 CFR 800.

17. A BLM resource advisor and, if feasible, an archaeologist, would be on site during suppression and rehabilitation activities to give guidance and ensure compliance with the guidelines and decisions established to protect cultural resource values. Guidelines should include prohibitions against the collection of artifactual materials from archaeological and historical resources.
18. The archaeologist assigned to the fire would work with the rehabilitation team to ensure that cultural resources, including historic structures and features, are considered during fire suppression restoration actions. Site treatment plans would be prepared for historic properties that have been damaged by fire suppression and require more detailed stabilization efforts. These treatment plans would protect the site from secondary effects of the fire and fire suppression activities.
19. Monitoring of sensitive site areas would be conducted when fire suppression rehabilitation plans are within close proximity to historic properties, or could have an indirect effect on an existing resource.
20. If stabilization/protective measures were employed for cultural resources a report summarizing those actions should be submitted to an appropriate SHPO. The report should include a description of the fire impacts, fire suppression and rehabilitation, and salvage activities. It should also include the number and types of sites affected and stabilized.
21. In accordance with the existing agreements or 36 CFR 800, the SHPO would be notified of a fire emergency and the suppression efforts associated with the emergency. Adjustments to these procedures may be made in response to comments from consulting parties; e.g. the SHPO, either programmatically through existing agreements or on a case-by-case basis where no agreement exists.
22. Surface disturbance should be limited within designated ACECs and formations known to contain significant fossil resources to protect paleontological values. In these areas with designated paleontological resources, the use of heavy equipment and off-road vehicles would be limited to existing roads and trails during rehabilitation.
23. Fire camps and fire staging areas should be placed outside and sufficiently distant from known or identified fossil localities. Use of motorized vehicles outside of fire camp and staging areas in known fossil producing formations should be avoided to prevent inadvertent impacts to fossil resources.
24. Significant fossils that are exposed by suppression activities or would be damaged by rehabilitation work should be recovered by a qualified Paleontologist.

Cultural and Paleontological Guidance
Fuels Management

25. Develop protocol with ND and SD SHPOs similar to that described in IM MT No. 99-032 for Miles City. This would allow for a sample inventory instead of a Class III intensive survey of an entire target area. Until that protocol is developed, prescribed fire projects in ND or SD would require consultation with the appropriate SHPOs to develop a prescribed fire survey and protection strategy. The inventory strategies developed for these two states should be similar to guidance provided in IM no. MT-99-032.

26. If a class III inventory is used instead of the sample inventory described in IM No. MT 99-032, no additional consultation with SHPO would be required.
27. Where known fossil resources are suspected but unknown and where the area cannot be avoided the following measures would be employed: 1. Conduct an inventory to identify the presence or absence of fossil resources employing a qualified paleontologist, 2. in areas where fossil resources are suspected or have been identified avoid using surface disturbing motorized vehicles, heavy equipment, or hand tools, and 3. advise fire personnel and others to refrain from collecting fossils on public lands.
28. To the extent possible during fuels treatment planning, use a qualified paleontologist to assess the risk of damages and to recommend ways to minimize damage to fossil resources resulting from implementation of the plan.

Terrestrial Wildlife Species (including Special Status Species) and Habitat Direction common to both Wildland Fire Management and **Fuels Management**

The following conservation measures would be applied to protect Threatened and Endangered terrestrial wildlife species:

29. Interior Least Tern (Endangered)
- No human disturbance within 1/4 mile of least tern nest site from May 15 to August 15;
- No prescribed burning activities within 1 mile upwind of least tern nest sites.
- No helicopter/aircraft activity or aerial retardant application within ½ mile of least tern nest sites between May 15 and August 15;
- No prescribed burning activities within 1 mile upwind of nest sites between May 15 and August 15.

30. Whooping Crane (Endangered)
- No human disturbance within ½ mile of occupied whooping crane habitat or potential habitat where whooping cranes have been identified within the past three years from April 1 to August 31
- No helicopter/aircraft activity or aerial retardant application within ½ mile of occupied whooping crane habitat or potential habitat where whooping cranes have been identified within the past three years from April 1 to August 31.

31. Black-footed Ferret (Endangered)
- No heavy equipment operation off of existing roads within 1/4 mile of prairie dog towns with documented occurrence of black-footed ferret
- No aerial retardant application within 1/4 mile of prairie dog towns with documented occurrence of black-footed ferret
- No surface disturbance (fire line construction) should occur in prairie dog towns with documented occurrence of black-footed ferret.

32. Gray Wolf (Endangered)
- No human disturbance or associated activities within 1 mile of a den or rendezvous site from April 15 to June 30.

33. Bald Eagle (Threatened)
- No human disturbance within ½ mile of bald eagle nests from February 1 through August 15;

- No human disturbance within 1/4 mile of a winter roost from November 1 through March 1 or, if within 1/4 mile, activity should be restricted to a period of 9 am to 3 pm;
- No helicopter/aircraft activity or aerial retardant application within ½ mile of known bald eagle nest sites from January 1 through August 15; or within 1/4 mile of a winter roost from November 1 through March 1;
- No prescribed burning activities within 1 mile upwind of nest sites from January 1 through August 15; or within 1 mile upwind of a winter roost between November 1 and March 1.

34. Piping Plover (Threatened)
- No human disturbance within 1/4 mile of any occupied nest sites from April 1 to July 31
- No prescribed burning within one mile upwind of any occupied nest sites from April 1 to July 31 ;
- No helicopter/aircraft activity or aerial retardant application within ½ mile of piping plover nest sites between April 15 and July 31.

35. Canada Lynx (Threatened)
- Activities shall not cause a greater than 30% temporary loss or 15% permanent loss of suitable habitat in a decade. In addition, 10% of the Lynx Assessment Unit (LAU) shall remain in denning habitat in patches larger than five acres;
- Processes used to reduce fuel levels, prepare sites for planting or for reintroduction of fire shall preserve the majority of large standing dead trees and large woody debris (denning habitat);
- Precommercial thinning or introduction of fire into lynx habitat shall only occur when the forest stand no longer provides snowshoe hare habitat. This occurs when self-pruning processes have eliminated snowshoe hare cover and forage availability.
- Following disturbance such as blowdown, fire, insects, and disease that could contribute to lynx habitat, do not salvage harvest when the affected area is smaller than 5 acres (exceptions would include areas such as developed campgrounds). Where larger areas are affected, retain a minimum of 10% of the affected area per LAU in patches of at least 5 acres;
- Design burn prescriptions to create snowshoe hare habitat (e.g. regeneration of aspen and lodgepole pine);
- Minimize construction of temporary roads, firebreaks, machine lines, etc. on ridges, saddles, or areas that would create permanent travel ways that could facilitate increased access by competitors (e.g. coyote, bobcat);
- Restrict livestock grazing of fire created openings, aspen stands, willow carrs, and other potential lynx habitat until successful regeneration of shrub and tree components occurs.

36. Grizzly Bear (Threatened)
- Within the Recovery Zone, as defined in the Grizzly Bear Recovery Plan (USFWS 1993), any off-road vehicular travel or vehicular travel on restricted roads shall adhere to access standards/direction as provided in local or regional interagency agreements, Biological Opinions, or local Land Use Plans;
- All activities requiring overnight stays or establishment of a base camp shall be limited to fewer than 20 individuals and less than 5 days duration within the Recovery Zone (defined in Grizzly Bear Recover Plan (USFWS 1993));

- Firewood collection within the Recovery Zone (defined in Grizzly Bear Recovery Plan (USFWS 1993)) shall be limited to roadside hazard tree removal, road maintenance, or campground maintenance activities;
- Activities within the Recovery Zone (defined in Grizzly Bear Recover Plan (USFWS 1993)) in Riparian, Meadows, and Stream Corridors including restoration and improvement projects must not occur between April 1 and July 1 or must be completed in one day;
- Within the Recovery Zone (defined in Grizzly Bear Recover Plan (USFWS 1993)) projects that would significantly change the vegetative community should not be implemented in huckleberry producing sites;
- In order to minimize the potential for habituation or human conflict, activities within the Recovery Zone (defined in Grizzly Bear Recover Plan (USFWS 1993)) will adhere to Interagency Grizzly Bear Guidelines or local interagency grizzly bear standards for sanitation measures or storage of potential attractants;
- Within the Recovery Zone (defined in Grizzly Bear Recover Plan (USFWS 1993)) activities will not involve planting or seeding of highly palatable forage species near roads or facilities used by humans.

37. Mountain Plover (Proposed)
    - No human disturbance within 1/4 mile of occupied mountain plover nest sites from April 1 to July 31;
    - No helicopter/aircraft activity or aerial retardant application within ½ mile of occupied mountain plover nest sites;
    - No prescribed burning within 1 mile upwind of any occupied mountain plover nest sites from April 1 to July 31.

Vegetation Direction
Wildland Fire Suppression
The following **conservation measures** would be applied to protect Threatened plant species:

38. Western Prairie Fringed Orchid, Water Howellia, Ute Ladies'-tresses (Threatened)
    - All proposed action areas within potential habitat shall be surveyed by a botanically qualified biologist, botanist, or ecologist to determine the presence/absence of the species;
    - No action that would potentially affect the species will be taken within suitable habitat if surveys are not completed to determine the presence or absence of the species;
    - Areas of occupied habitat within a proposed project area will have a "site specific" no activity buffer established by a qualified botanist, biologist, or ecologist, to protect occupied habitat;
    - Best Management Practices should be applied to protect the area from invasive plant species;
    - Non-native species should not be used in revegetation of suitable habitat.

Visual Direction
Wildland Fire Suppression

39. The use of heavy equipment and retardant for wildland fire suppression should be avoided in designated VRM Class I and Class II areas unless the impact of the fire would more severely impact the VRM values than the impact of equipment and retardant.

40. Fire rehabilitation of VRM Class I and II areas should be coordinated with a VRM specialist.
41. Fuels management projects should be coordinated with a VRM specialist.

APPENDIX D

Fire Training Activities

Table 28. Fire Training Activities

Refresher and/or Recertification requirements						
Course	**Once**	**Annually**	**2 Years**	**3 Years**	**4 Years**	**5 Years**
Driver Safety/Awareness				X		
First Aid [1]			X	X		
CPR Academic		X				
CPR [2]		X	X			
Hazard Communication		X				
Bloodborne Pathogens	X					
Hearing [3]	X					
Hearing Evaluations [4]		X				
Fire Extinguisher		X				
Fire Evacuation		X				
Rights & Responsibilities	X					
ATV/Motorcycle						X
Forklift				X		
Boat		X				

[1] Required for all field going staff, if Red Cross certify every 3 years, otherwise every 2 years.
[2] Required for all field going staff, if Red Cross certified requires every year, otherwise every 2 years.
[3] Required at least once for employees exposed to levels above 90dbA
[4] Required annually for employees exposed to levels above 90dbA

APPENDIX E

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FIRES BY REPORTED SIZE CLASS ACRES

Human-Caused Fires Years: 1993 - 2002

Year	A	B	C	D	E	F	G	TOTAL
1993	1	0	1	0	0	0	0	2
	0	0	97	0	0	0	0	97
1994	2	4	1	3	0	0	0	10
	0	5	15	650	0	0	0	670
1995	1	5	4	0	2	0	0	12
	0	9	53	0	1369	0	0	1431
1996	3	9	3	2	2	0	0	19
	0	24	200	330	1500	0	0	2054
1997	4	7	2	1	0	0	0	14
	0	18	45	125	0	0	0	188
1998	1	0	0	0	0	0	0	1
	0	0	0	0	0	0	0	0
1999	1	2	1	2	1	0	0	7
	0	2	65	267	444	0	0	778
2000	0	4	0	0	0	0	0	4
	0	12	0	0	0	0	0	12
2001	1	4	1	0	0	1	0	7
	0	9	14	0	0	1757	0	1780
2002	2	3	3	0	0	2	1	11
	0	9	94	0	0	4921	6000	11024
TOTALS:	**16**	**38**	**16**	**8**	**5**	**3**	**1**	**87**
	0	**88**	**583**	**1372**	**3313**	**6678**	**6000**	**18034**

APPENDIX E, cont.

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FIRES - BY REPORTED SIZE CLASS ACRES

Lightning Fires Years: 1993 -2002

Year	A	B	C	D	E	F	G	TOTAL
1993	5	14	3	0	2	0	0	24
	1	26	100	0	1000	0	0	1127
1994	4	48	26	5	5	4	1	93
	1	108	799	600	3300	6850	12100	23758
1995	19	42	18	2	3	2	O	86
	2	77	612	272	1200	3000	0	5163
1996	19	67	23	6	3	4	0	122
	3	127	765	885	1707	9550	0	13037
1997	9	42	3	2	0	0	0	56
	1	76	79	245	0	0	0	401
1998	26	78	26	2	4	1	1	138
	3	185	916	249	1914	4520	5680	13467
1999	10	34	9	1	2	0	0	56
	2	64	305	150	670	0	0	1191
2000	37	63	18	3	9	2	5	137
	5	131	506	586	4986	6000	158949	171163
2001	20	51	12	4	1	1	0	89
	2	92	319	634	964	2900	0	4911
2002	28	95	19	4	1	0	3	150
	3	144	575	699	500	0	91189	93110
TOTALS:	**177**	**534**	**157**	**29**	**30**	**14**	**10**	**951**
	23	**1030**	**4976**	**4320**	**16241**	**32820**	**267918**	**327328**

APPENDIX E, cont.

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FIRES BY REPORTED SIZE CLASS ACRES

All Fires Year 1993-2002

Year	A	B	C	D	E	F	G	TOTAL
1993	6	14	4	0	2	0	0	26
	1	26	197	0	1000	0	0	1224
1994	6	52	27	8	5	4	1	103
	1	113	814	1250	3300	6850	12100	24428
1995	20	47	22	2	5	2	0	98
	2	86	665	272	2569	3000	0	6594
1996	22	76	26	8	5	4	0	141
	3	151	965	1215	3207	9550	0	15091
1997	13	49	5	3	0	0	0	70
	2	94	124	370	0	0	0	590
1998	27	78	26	2	4	1	1	139
	3	185	916	249	1914	4520	5680	13467
1999	11	36	10	3	3	0	0	63
	2	66	370	417	1114	0	0	1969
2000	37	67	18	3	9	2	5	141
	5	143	506	586	4986	6000	158949	171175
2001	21	55	13	4	1	2	0	96
	2	101	333	634	964	4657	0	6691
2002	30	98	22	4	1	2	4	161
	3	153	669	699	500	4921	97189	104134
TOTALS:	**193**	**572**	**173**	**37**	**35**	**17**	**11**	**1038**
	24	**1118**	**5559**	**5692**	**19554**	**39498**	**273918**	**345363**

APPENDIX F

Table 29. PROPOSED FUELS TREATMENT PROJECTS

Fire Management Unit	B1 Cedar Breaks	B5 Mixed-Grass Prairie-Sagebrush	B6 Rural Interface	C2 Vicinity of Custer NF	C3 Knowlton-Locate	C4 Missouri-Musselshell Breaks
WUI/ Non-WUI	WUI	Contains Both	WUI	Contains Both	Contains Both	Contains Both
Proposed Projects	North Pine Unit Rx (HA 26)	Bradshaw Rx Line Cr Rx Rough Cr Rx Swain M/Rx Carr Rx Terry Bench Buffalo Cr RX Howery Island M	Pine Hills M/Rx Wildhorse M/Rx	Ekalaka HillsM/Rx Maverick Prong Rx Swain M	Monte Rx	6X-7W Rx (HA03)RE H Cross Rx (HA 50)RE N.Breaks Rx(HA 51)RE Bliss Rx (HA 30)RE Rich South Rx (HA24)RE S.Breaks Rx (HA25)RE Rich North Rx (HA68) Curry Rx(HA67) Dailey Rx(HA36)
Completed Projects	Cedar Ck Units Rx (HA 26) 98,00	US Bar Cement Hole				6X-7W Rx H Cross Rx N. Breaks Rx S. Breaks Rx Bliss Rx Rich South Rx
Proposed Acres	15,000	App. 21,000	App. 12,500	App 7,000	App. 12,000	App. 80,000
New NEPA Required	CX, EA	CX,EA	CX,EA	CX,EA	EA	CX, EA
NEPA Completed		2004(Howery)		03		
Proposed Budget	$1,500,000.00	$2,300,000.00	$ 4,000,000	$450,000.00		$700,000
Year Treatment Started	1998	2000, 2004		2004		1998
Year Treatment Completed						
FRCC	2,3	2,3	2,3	2,3	2,3	2,3

APPENDIX G

IIAA RESULTS WORKSHEET - PAGE 1 MILES CITY DISTRICT
FBD: CAL

Dollar Amounts by IIAA Code and Option

IIAA CODE	A13
ADMM	282975
ATB	20931
ATT4	209693
CACHE	5616
CMTL	20420
DAM	67394
DFCO	138669
DISP	193310
DOFS	228843
DTECT	15315
ENG4	200343
ENG6	856516
ENG7	71470
FSS	196596
H3	333733
LOOK	29817
MAINT	15315
PREV	47089
SMJR	12252
SUPPV	67386
UTIL	10210
WT2	46557
BUDGET	3070450
SUPP	1381631
NVC	-6862745
C+NVC	11314826
ACRES	19525.49

APPENDIX G, cont.

IIAA RESULTS WORKSHEET - PAGE 2 MILES CITY DISTRICT
FBD: CAL

Counts by IIAA Code and option

IIAA CODE	A13
ADMM	1
ATB	1
ATT4	2
CACHE	1
CMTL	1
DAM	1
DFCO	2
DISP	2
DOFS	5
DTECT	1
ENG4	2
ENG6	9
FSS	4
FUAF	3
H3	2
LOOK	1
MAINT	1
PREV	1
SMJR	8
SUPPV	17
UTIL	1
WT2	1

05-28-2004 10:36:39

FBD: CAL

OPT	OB	Budget	Supp	NVC	C+NVC	Acres
A13		3,070,448	1,381,631	6,862,745	11,314,824	19,525.49

APPENDIX G, cont.

SUPPRESSION TABLE 1 09-14-2004 11:57:36
ADMIN UNIT: 2
ANALYSIS ZONE: GR
FUEL MODEL: L
MAX FIRE SIZE MODELLED: 300 AC W/ TIME LIMIT OF: 24 HRS OPTION ID: A13
FBD: CAL

SUMMARY BY INTENSITY LEVEL AND FINAL SIZE OF FIRES

DOLLAR AMOUNTS NOT INFLATED

FIL	# FIRES	ROS CH/HR	REP LOC	FINAL SIZE	FREQ PER YR	EVENT SUPP $	EVENT NVC $
1	1.64	1.90	1	0.05	0.485	2243	0
			2	0.10	0.066	3137	-1
			3	0.17	0.118	4149	-1
			4	1.36	0.643	5945	-10
		3.16	1	0.14	0.121	3625	-1
			2	0.32	0.016	5501	-2
			3	0.50	0.030	5568	-3
			4	4.46	0.161	6828	-31
2	6.53	4.70	1	0.34	1.933	5489	-3
			2	0.85	0.261	5653	-7
			3	0.94	0.470	7287	-7
			4	8.09	2.560	9668	-65
		9.39	1	2.82	0.483	6195	-23
			2	7.81	0.065	7636	-62
			3	4.46	0.118	8291	-36
			4	41.25	0.640	13093	-330
3	4.10	17.71	1	159.76	1.214	20038	-1438
			2	34.25	0.164	11566	-308
			3	12.75	0.295	12301	-115
			4	72.00	1.607	16413	-648
		24.93	1	426.00*	0.303	12576	-3834
			2	131.10	0.041	20982	-1180
			3	28.68	0.074	13856	-258
			4	222.29	0.402	24610	-2001
4	2.03	34.12	1	450.00*	0.601	12000	-6300
			2	242.04	0.081	24374	-3389
			3	67.74	0.146	18530	-948
			4	204.99	0.796	25127	-2870
		42.96	1	480.00*	0.150	11280	-6720
			2	1500.00*	0.020	20500	-21000
			3	159.60	0.037	21812	-2234
			4	560.00*	0.199	10990	-7840
5	2.10	51.00	1	1000.00*	0.622	12500	-19000
			2	5300.00*	0.084	81300	-100700
			3	620.00*	0.151	11230	-11780
			4	620.00*	0.823	11230	-11780
		55.00	1	9500.00*	0.155	148500	-180500
			2	12100.00*	0.021	190100	-229900
			3	7800.00*	0.038	121300	-148200
			4	11000.00*	0.206	172500	-209000

APPENDIX G, cont.

SUPPRESSION TABLE 2 09-14-2004 11:57:36
ADMIN UNIT: 2
ANALYSIS ZONE: GR
FUEL MODEL: L
MAX FIRE SIZE MODELLED: 300 ACW/ TIME LIMIT OF: 24 HRS
OPTION ID: A13
FBD: CAL

EXPECTED ANNUAL ACRES BURNED BY FIRE SIZE AND INTENSITY

FIL	0-.25	.26-9.99	10-99.99	100-299.99	300-999.99	1000+ ESC	TOTAL
1	0.07	1.61	0.00	0.00	0.00	0.00	1.68
2	0.00	24.41	26.40	0.00	0.00	0.00	50.81
3	0.00	0.00	127.21	288.57	129.25	0.00	545.03
4	0.00	0.00	9.90	188.61	453.91	30.45	682.87
5	0.00	0.00	0.00	0.00	604.13	5355.84	5959.97
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	0.07	26.02	163.51	477.18	1187.28	5386.29	7240.36
HIST	0.16	20.77	125.71	155.80	662.08	5404.70	6369.22
% DIF	-56	25	30	206	79	0	14
CUM %	0.00	0.36	2.62	9.21	25.61	100.00	

SUPPRESSION TABLE 2a

ADMIN UNIT: 2

ANALYSIS ZONE: GR

FUEL MODEL: L
MAX FIRE SIZE MODELLED: 300 ACW/ TIME LIMIT OF: 24 HRS
OPTION ID: A13
FBD: CAL

FRACTION OF EXPECTED ACRES BURNED FROM EFT

FIL	0-.25	.26-9.99	10-99.99	100-299.99	300-999.99 1000+	ESC	TOTAL
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	1.00	0.00	1.00
4	0.00	0.00	0.00	0.00	1.00	1.00	1.00
5	0.00	0.00	0.00	0.00	1.00	1.00	1.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**	**1.00**

APPENDIX G, cont.

SUPPRESSION TABLE 3 09-14-2004 11:57:36
ADMIN UNIT: 2
ANALYSIS ZONE: GR
FUEL MODEL: L
MAX FIRE SIZE MODELLED: 300 AC W/ TIME LIMIT OF : 24 HRS
OPTION ID: A13
FBD: CAL

EXPECTED ANNUAL NUMBER OF FIRES BY SIZE AND INTENSITY

FIL	0-.25	.26-9.99	10-99.99	100-299.99	300-999.99	1000+ ESC	TOTAL
1	0.790	0.850	0.000	0.000	0.000	0.000	1.640
2	0.000	5.890	0.640	0.000	0.000	0.000	6.530
3	0.000	0.000	2.140	1.656	0.303	0.000	4.100
4	0.000	0.000	0.146	0.914	0.950	0.020	2.030
5	0.000	0.000	0.000	0.000	0.974	1.126	2.100
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	0.790	6.740	2.926	2.570	2.228	1.146	16.400
HIST	1.300	8.100	3.800	0.900	1.100	1.200	16.400
% DIF	-39	-17	-23	186	103	-5	0
CUM %	4.820	45.915	63.758	79.428	93.013	100.000	

APPENDIX G, cont.

SUPPRESSION TABLE 4 09-14-2004 11:57:36
ADMIN UNIT: 2
ANALYSIS ZONE: GR
FUEL MODEL: L
MAX FIRE SIZE MODELLED: 300 ACW/ TIME LIMIT OF: 24 HRS OPTION ID: A13
FBD: CAL

SUMMARY OF ANNUAL FIRE VALUES BY REP. LOCATION

REP LOC	FREQ	ACRES	EM SUPP COST	NVC	SUPP + NVC
1	6.07	2765.59	83230	-54833	138063
2	0.82	761.14	18286	-16241	34527
3	1.48	411.20	19604	-8832	28437
4	8.04	3302.43	141867	-67748	209615
TOTAL	**16.40**	**7240.36**	**262989**	**-47653**	**410642**

SUPPRESSION TABLE 4a 09-14-2004 11:57:36

ADMIN UNIT: 2
ANALYSIS ZONE: GR
FUEL MODEL: L
MAX FIRE SIZE MODELLED: 300 ACW/ TIME LIMIT OF: 24 HRS
OPTION ID: A13
FBD: CAL

NET VALUE CHANGE SUMMARY (ALL VALUES ARE IN WHOLE DOLLARS)

RL	TIMBER	FORAGE	WTR USE	WTR STR	FISH	WILD	REC	IMPROVE	TOTAL
1	-	-2698	0	0	0	-23089	-32	-29014	-54833
2	0	-739	0	0	0	-6978	-9	-8515	-16241
3	0	-400	0	0	0	-3804	-5	-4624	-8832
4	0	-3218	0	0	0	-28842	-38	-35650	-67748
SUM	0	-7055	0	0	0	-62713	-83	-77803	-147653

APPENDIX G, cont.

SUPPRESSION TABLE 5 05-28-2004 10:51:16
ADMIN UNIT: 2
ANALYSIS ZONE: GR
FUEL MODEL: L
MAX FIRE SIZE MODELLED: 300 ACW/ TIME LIMIT OF: 24 HRS OPTION ID: A13
FBD: CAL

DISPATCH SUMMARY

(EXPECTED ANNUAL NUMBER OF MISSIONS)

UNIT ID	1	2	3	4	5	6	TOTAL DISP
E6MCD06	0.61	2.42	1.52	0.75	0.78	0.00	6.07
A2BIL	0.00	0.00	0.00	0.00	0.78	0.00	0.78
E6MCD05	0.00	0.00	1.52	0.75	0.78	0.00	3.05
E4MCD02	0.00	0.00	2.38	0.28	0.19	0.00	2.85
E4MCD01	0.00	3.79	4.10	0.28	0.19	0.00	8.36
E6MCD08	0.00	0.00	2.01	0.99	1.03	0.00	4.03
E6MCD07	0.00	0.00	2.01	0.99	1.03	0.00	4.03
A5MC	0.00	0.00	2.58	1.28	1.32	0.00	5.18
E6MCD04	0.08	0.33	0.21	0.10	0.11	0.00	0.82
A5 COLSTP	0.00	0.00	0.00	1.28	1.32	0.00	2.60
E6MCD03	0.95	3.79	2.58	0.28	0.19	0.00	7.79
SJ	0.00	0.00	0.00	0.00	1.22	0.00	1.22
H3MCD01	0.00	0.00	0.00	0.99	1.03	0.00	2.02
E6MCD11	0.00	0.00	0.00	0.00	1.03	0.00	1.03
E6MCD10	0.00	0.00	0.00	0.00	1.03	0.00	1.03
HB	0.00	0.00	0.00	0.99	1.03	0.00	2.02
E6MCD09	0.00	0.00	0.00	0.99	1.03	0.00	2.02
TOTAL	1.64	10.32	18.90	9.99	14.0	0.00	54.92

APPENDIX G, cont.

SUPPRESSION TABLE 1 09-14-2004 11:57:36
ADMIN UNIT: 2
ANALYSIS ZONE: TB
FUEL MODEL: C
MAX FIRE SIZE MODELLED: 100 ACW/ TIME LIMIT OF: 24HRS
OPTION ID: A13
FBD: CAL

SUMMARY BY INTENSITY LEVEL AND FINAL SIZE OF FIRES DOLLAR AMOUNTS NOT INFLATED

FIL	# FIRES	ROS CH/HR	REP LOC	FINAL SIZE	FREQ PER YR	EVENT SUPP $	EVENT NVC $
1	16.20	1.49	1	0.03	3.240	1949	-1
			2	0.08	3.370	4036	-2
			3	0.06	1.555	3778	-1
			5	0.35	0.259	6831	-3
			6	0.09	2.203	2865	-1
			7	50.34*	0.518	22733	-503
			8	0.10	0.389	2955	-1
			9	0.23	1.166	4906	-2
			10	0.21	0.259	4568	-2
		2.03	1	0.06	0.810	2266	-1
			2	0.13	0.842	4872	-3
			3	0.11	0.389	4466	-3
			5	0.74	0.065	7286	-7
			6	0.17	0.551	4022	-2
			7	93.42*	0.130	30834	-934
			8	0.19	0.097	4272	-2
			9	0.45	0.292	5458	-5
			10	0.41	0.065	5404	-4
2	4.95	4.43	1	0.22	0.990	6078	0.24
			2	0.52	1.030	11119	-58
			3	0.52	0.475	6946	-58
			5	9.91	0.079	18042	-119
			6	0.81	0.673	7297	-10
			7	2.70	0.158	8077	-32
			8	0.76	0.119	8961	-9
			9	3.74	0.356	9317	-45
			10	3.36	0.079	8861	-40
		5.41	1	0.34	0.248	6688	-37
			2	0.81	0.257	11452	-90
			3	0.84	0.119	7317	-93
			5	31.11	0.020	22110	-373
			6	1.28	0.168	7849	-15
			7	10.25	0.040	16680	-123
			8	1.16	0.030	9435	-14
			9	13.18	0.089	17244	-158
			10	12.04	0.020	17026	-144
3	14.35	7.03	1	0.40	2.870	4396	-164
			2	0.37	2.985	6945	-152
			3	1.15	1.378	8691	-468
			5	4.98	0.230	13483	-90
			6	0.75	1.952	7745	-13
			7	0.96	0.459	8135	-17
			8	1.82	0.344	10654	-33
			9	7.65	1.033	15316	-138
			10	8.99	0.230	16780	-162
		7.90	1	0.51	0.718	4517	-206
			2	0.47	0.746	7058	-191
			3	1.58	0.344	9192	-641
			5	9.18	0.057	20010	-165

			6	0.94	0.488	7973	-17
			7	2.55	0.115	10286	-46
			8	2.38	0.086	11306	-43
			9	11.70	0.258	18387	-211
			10	11.35	0.057	18216	-204
4	29.20	7.13	1	0.41	5.840	4409	-236
			2	0.39	6.074	6957	-219
			3	1.34	2.803	9834	-764
			5	3.74	0.467	13679	-101
			6	1.18	3.971	9276	-32
			7	0.58	0.934	7436	-16
			8	1.94	0.701	13844	-52
			9	4.31	2.102	12699	-116
			10	5.34	0.467	13904	-144
		9.28	1	0.75	1.460	9089	-425
			2	0.65	1.518	7263	-367
			3	2.65	0.701	11368	-1508
			5	9.79	0.117	20859	-264
			6	2.00	0.993	10231	-54
			7	1.67	0.234	9623	-45
			8	3.74	0.175	15953	-101
			9	13.32	0.526	20082	-360
			10	15.65	0.117	20606	-423
5	15.90	21.07	1	11.65	3.180	21989	-7302
			2	17.46	3.307	30033	-10946
			3	36.69	1.526	36282	-23006
			5	261.00*	0.254	46726	-8091
			6	28.00	2.162	28592	-868
			7	39.27	0.509	30471	-1217
			8	29.50	0.382	27803	-914
			9	261.00*	1.145	46726	-8091
			10	261.00*	0.254	46726	-8091
		24.36	1	20.33	0.795	27961	-12744
			2	29.09	0.827	32310	-18239
			3	54020.00*	0.382	993320	33870540
			5	300.00*	0.064	57150	-9300
			6	49.04	0.541	32637	-1520
			7	67.41	0.127	35942	-2090
			8	50.18	0.095	31781	-1555
			9	281.00*	0.286	52046	-8711
			10	281.00*	0.064	52046	-8711
6	1.70	29.68	1	990.00*	0.340	144090	-649440
			2	300.00*	0.354	57150	-196800
			3	60011.00*	0.163	1089176	39367216
			5	310.00*	0.027	58410	-10540
			6	298.00*	0.231	56568	-10132
			7	300.00*	0.054	57150	-10200
			8	298.00*	0.041	56568	-10200
			9	300.00*	0.122	57150	-10200
			10	298.00*	0.027	56568	-10132
		30.11	1	66000.00*	0.085	1185000	43296000
			2	66000.00*	0.088	1185000	43296000
			3	66000.00*	0.041	1185000	43296000
			5	66000.00*	0.007	1185000	-2244000
			6	66000.00*	0.058	1185000	-2244000
			7	66000.00*	0.014	1185000	-2244000
			8	66000.00*	0.010	1185000	-2244000
			9	66000.00*	0.031	1185000	-2244000
			10	66000.00*	0.007	1185000	-2244000

APPENDIX G, cont.

SUPPRESSION TABLE 2 09-14-2004 11:57:36
ADMIN UNIT: 2
ANALYSIS ZONE: TB
FUEL MODEL: C
MAX FIRE SIZE MODELLED: 100 ACW/ TIME LIMIT OF: 24 HRS
OPTION ID: A13
FBD: CAL

EXPECTED ANNUAL ACRESS BURNED BY FIRE SIZE AND INTENSITY

FIL	0-.25	.26-9.99	10-99.99	100-299.99	300-999.99	1000+ ESC	TOTAL
1	1.34	0.30	38.20	0.00	0.00	0.00	39.83
2	0.21	4.88	2.43	0.00	0.00	0.00	7.52
3	0.00	20.25	3.67	0.00	0.00	0.00	23.92
4	0.00	36.53	8.83	0.00	0.00	0.00	45.36
5	0.00	0.00	322.65	529.88	19.08	20614.03	21485.64
6	0.00	0.00	0.00	89.16	504.15	32233.79	32827.11
TOTAL	1.55	61.95	375.79	619.05	523.23	52847.82	54429.39
HIST	2.05	84.67	398.70	336.38	1161.90	24578.00	26561.70
% DIF	-24	-27	-6	84	-55	115	105
CUM %	0.00	0.12	0.81	1.94	2.91	100.00	

SUPPRESSION TABLE 2a

ADMIN UNIT: 2

ANALYSIS ZONE: TB

FUEL MODEL: C
MAX FIRE SIZE MODELLED: 100 ACW/ TIME LIMIT OF: 24 HRS
OPTION ID: A13
FBD: CAL

FRACTION OF EXPECTED ACRES BURNED FROM EFT

FIL	0-.25	.26-9.99	10-99.99	100-299.99	300-999.99 1000+	ESC	TOTAL
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	1.00	1.00	1.00	1.00
6	0.00	0.00	0.00	1.00	1.00	1.00	1.00
TOTAL	0.00	0.00	0.00	1.00	1.00	1.00	1.00

APPENDIX G, cont.

SUPPRESSION TABLE 3 09-14-2004 11:57:36
ADMIN UNIT: 2
ANALYSIS ZONE: TB
FUEL MODEL: C
MAX FIRE SIZE MODELLED: 100 AC W/ TIME LIMIT OF: 24 HRS
OPTION ID: A13
FBD: CAL

EXPECTED ANNUAL NUMBER OF FIRES BY SIZE AND INTENSITY

FIL	0-.25	.26-9.99	10-99.99	100-299.99	300-999.99	1000+ ESC	TOTAL
1	14.872	0.680	0.648	0.000	0.000	0.000	16.200
2	0.990	3.792	0.168	0.000	0.000	0.000	4.950
3	0.000	14.034	0.316	0.000	0.000	0.000	14.350
4	0.000	28.558	0.642	0.000	0.000	0.000	29.200
5	0.000	0.000	13.451	2.003	0.064	0.382	15.900
6	0.000	0.000	0.000	0.299	0.898	0.503	1.700
TOTAL	15.862	47.064	15.226	2.303	0.961	0.885	82.300
HIST	17.300	46.600	12.500	2.400	2.100	1.400	82.300
% DIF	-8	1	22	-4	-54	-37	0
CUM %	19.273	76.459	94.959	97.757	98.925	100.000	

APPENDIX G, cont.

SUPPRESSION TABLE 4 09-14-2004 11:57:37
ADMIN UNIT: 2
ANALYSIS ZONE: TB
FUEL MODEL: C
MAX FIRE SIZE MODELLED: 100 ACW/ TIME LIMIT OF: 24 HRS OPTION ID: A13
FBD: CAL

SUMMARY OF ANNUAL FIRE VALUES BY REP. LOCATION

REP LOC	FREQ	ACRES	EM SUPP COST	NVC	SUPP + NVC
1	20.58	6005.28	313625	-4537030	4850655
2	21.40	6028.17	364730	-4552974	4917704
3	9.88	33164.86	724154	-24379828	25103983
5	1.65	548.81	42475	-21114	63590
6	13.99	3980.43	243150	-155543	398694
7	3.29	983.17	71401	-37325	108727
8	2.47	704.43	48400	-27509	75909
9	7.41	2465.43	182014	-94884	276898
10	1.65	548.80	41250	-21112	62362
TOTAL	**82.30**	**54429.39**	**2031203**	**-33827319**	**35858522**

SUPPRESSION TABLE 4a 09-14-2004 11:57:37

ADMIN UNIT: 2
ANALYSIS ZONE: TB
FUEL MODEL: C
MAX FIRE SIZE MODELLED: 100 ACW/ TIME LIMIT OF: 24 HRS OPTION ID: A13
FBD: CAL

NET VALUE CHANGE SUMMARY (ALL VALUES ARE IN WHOLE DOLLARS)

RL	TIMBER	FORAGE	WTR USE	WTR STR	FISH	WILD	REC	IMPROVE	TOTAL
1	-4491688	-29352	0	0	0	0	0	-15990	-4537030
2	-4507461	-29464	0	0	0	0	0	-16049	-4552974
3	-24129432	-162090	0	0	0	0	0	-88307	-24379828
4	0	0	0	0	0	0	0	0	0
5	0	-542	0	0	0	-10874	-273	-9426	-21114
6	0	-3918	0	0	0	-81270	-2039	-68316	-155543
7	0	-970	0	0	0	-19422	-487	-16446	-37325
8	0	-693	0	0	0	-14367	-360	-12088	-27509
9	0	-2434	0	0	0	**-48864**	**-1226**	**-42360**	**-94884**
10	0	-542	0	0	0	-10869	-273	-9428	-21112
11	0	0	0	0	0	0	0	0	0
SUM	-33128581	-230004	0	0	0	-185666	-4657	-278410	-33827319

APPENDIX G, cont.

AAC INPUT TABLE ANALYSIS ZONE: GR

PER ACRE SUPPRESSION COST DOLLAR AMOUNTS NOT INFLATED

ACRE LIMIT	$ COST
0.3	31124
10.0	1132
100.0	231
300.0	70
500.0	34
1000.0	9
999999.0	16

EFT INPUT TABLE ANALYSIS ZONE: GR
FBD: CAL

ESCAPED FIRE TABLE

RL	1	2	3	4	5	6
1	301	351	401	450	1000	12100
	326	376	426	480	9500	12100
2	301	375	449	523	5300	12100
	338	412	486	1500	12100	12100
3	301	343	385	425	620	12100
	322	364	406	450	7800	12100
4	301	375	449	523	620	12100
	338	412	486	560	11000	12100

APPENDIX G, cont.

NVC INPUT TABLE ANALYSIS ZONE: GR

NVC PER ACRE INPUT TABLE DOLLAR AMOUNTS NOT INFLATED

TABLE: GR FOR REP LOCATION(S): 1 2 3 4

RESOURCE	1	2	3	4	5	6
Mature Timber	0.00	0.00	0.00	0.00	0.00	0.00
Immature Poles	0.00	0.00	0.00	0.00	0.00	0.00
Immature S/Sap	0.00	0.00	0.00	0.00	0.00	0.00
Forage	-0.85	-0.85	-0.85	-0.85	-0.85	-0.85
Water	0.00	0.00	0.00	0.00	0.00	0.00
Soils	0.00	0.00	0.00	0.00	0.00	0.00
Fish Wm/Cd Wtr	0.00	0.00	0.00	0.00	0.00	0.00
Fish Anad Sprt	0.00	0.00	0.00	0.00	0.00	0.00
Fish Commercl	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife Big Gm	-2.76	-2.76	-2.76	-5.53	-8.29	-11.05
Wildlife Other	0.00	0.00	0.00	0.00	0.00	0.00
Rec Disp/Dev	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02
Rec Wildernesss	0.00	0.00	0.00	0.00	0.00	0.00
Improvements	-3.00	-4.00	-5.00	-8.00	-10.00	-15.00
TOTAL	**-6.62**	**-7.62**	**-8.62**	**-14.39**	**-19.15**	**-26.92**

AAC INPUT TABLE ANALYSIS ZONE: TB

PER ACRE SUPPRESSION COST DOLLAR AMOUNTS NOT INFLATED

Acre Limit	$ Cost
0.3	27219
10.0	2586
100.0	444
200.0	198
300.0	107
1000.0	274
999999.0	16

APPENDIX G, cont.

EFT INPUT TABLE ANALYSIS ZONE: TB

FBD: CAL

ESCAPED FIRE TABLE

RL	1	2	3	4	5	6		
1	101	281	461	641	821	990		
	191	371	551	731	911	66000		
2	101	141	181	221	261	300		
	121	161	201	241	281	66000		
3	101	12083		24065		36047	48029	60011
	6092	18074		30056		42038	54020	66000
4	101	141	181	221	261	298		
	121	161	201	241	281	66000		
5	101	141	181	221	261	310		
	121	161	201	241	300	66000		
6	101	141	181	221	261	298		
	121	161	201	241	281	66000		
7	101	141	181	221	261	300		
	121	161	201	241	281	66000		
8	101	141	181	221	261	298		
	121	161	201	241	281	66000		
9	101	141	181	221	261	300		
	121	161	201	241	281	66000		
10	101	141	181	221	261	298		
	121	161	201	241	281	66000		
11	101	141	181	221	261	298		
	121	161	201	241	281	66000		

APPENDIX G, cont.

NVC INPUT TABLE ANALYSIS ZONE: TB

NVC PER ACRE INPUT TABLE DOLLAR AMOUNTS NOT INFLATED

TABLE: TB FOR REP LOCATION(S):5 6 7 8 9 10 11

RESOURCE	1	2	3	4	5	6
Mature Timber	0.00	0.00	0.00	0.00	0.00	0.00
Immature Poles	0.00	0.00	0.00	0.00	0.00	0.00
Immature S/Sap	0.00	0.00	0.00	0.00	0.00	0.00
Forage	-0.86	-0.86	-	-0.86	-0.86	-0.86
Water	0.00	0.00	0.00	0.00	0.00	0.00
Soils	0.00	0.00	0.00	0.00	0.00	0.00
Fish Wm/Cd Wtr	0.00	0.00	0.00	0.00	0.00	0.00
Fish Anad Sprt	0.00	0.00	0.00	0.00	0.00	0.00
Fish Commercl	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife Big Gm	-3.59	-3.59	-	-10.77	-14.35	-17.94
Wildlife Other	0.00	0.00	0.00	0.00	0.00	0.00
Rec Disp/Dev	-0.09	-0.09	-	-0.27	-0.36	-0.45
Rec Wildernesss	0.00	0.00	0.00	0.00	0.00	0.00
Improvements	-5.00	-7.00	-10.00	-15.00	-15.00	-15.00
TOTAL	**-9.54**	**-11.54**	**-18.22**	**-26.90**	**-30.57**	**-34.25**

TABLE: TBC FOR REP LOCATION(S): 1 2 3 4

RESOURCE	1	2	3	4	5	6
Mature Timber	-14.07	-92.61	-378.67	-536.94	-591.57	-618.19
Immature Poles	-6.89	-13.51	-20.97	-25.21	-28.75	-31.07
Immature S/Sap	0.00	0.00	0.00	0.00	0.00	0.00
Forage	-4.24	-4.24	-4.24	-4.24	-4.24	-4.24
Water	0.00	0.00	0.00	0.00	0.00	0.00
Soils	0.00	0.00	0.00	0.00	0.00	0.00
Fish Wm/Cd Wtr	0.00	0.00	0.00	0.00	0.00	0.00
Fish Anad Sprt	0.00	0.00	0.00	0.00	0.00	0.00
Fish Commercl	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife Big Gm	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife Other	0.00	0.00	0.00	0.00	0.00	0.00
Rec Disp/Dev	0.00	0.00	0.00	0.00	0.00	0.00
Rec Wildernesss	0.00	0.00	0.00	0.00	0.00	0.00
Improvements	-0.27	-0.81	-2.04	-2.31	-2.31	-2.31
TOTAL	**-25.47**	**-111.17**	**-405.92**	**-568.70**	**-626.87**	**-655.81**

APPENDIX G, cont.

AC INPUT TABLE ANALYSIS ZONE: GR

PER ACRE SUPPRESSION COST DOLLAR AMOUNTS NOT INFLATED

ACRE LIMIT	$ COST
0.3	31124
10.0	1132
100.0	231
300.0	70
500.0	34
1000.0	9
999999.0	16

EFT INPUT TABLE ANALYSIS ZONE: GR
FBD: CAL

ESCAPED FIRE TABLE

RL	1	2	3	4	5	6
1	301	351	401	450	1000	12100
	326	376	426	480	9500	12100
2	301	375	449	523	5300	12100
	338	412	486	1500	12100	12100
3	301	343	385	425	620	12100
	322	364	406	450	7800	12100
4	301	375	449	523	620	12100
	338	412	486	560	11000	12100

APPENDIX G, cont.

NVC INPUT TABLE ANALYSIS ZONE: GR

NVC PER ACRE INPUT TABLE DOLLAR AMOUNTS NOT INFLATED

TABLE: GR FOR REP LOCATIONS(S): 1 2 3 4

RESOURCE	1	2	3	4	5	6
Mature Timber	0.00	0.00	0.00	0.00	0.00	0.00
Immature Poles	0.00	0.00	0.00	0.00	0.00	0.00
Immature S/Sap	0.00	0.00	0.00	0.00	0.00	0.00
Forage	-0.85	-0.85	-0.85	-0.85	-0.85	-0.85
Water	0.00	0.00	0.00	0.00	0.00	0.00
Soils	0.00	0.00	0.00	0.00	0.00	0.00
Fish Wm/Cd Wtr	0.00	0.00	0.00	0.00	0.00	0.00
Fish Anad Sprt	0.00	0.00	0.00	0.00	0.00	0.00
Fish Commercl	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife Big Gm	-2.76	-2.76	-2.76	-5.53	-8.29	-11.05
Wildlife Other	0.00	0.00	0.00	0.00	0.00	0.00
Rec Disp/Dev	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02
Rec Wildernesss	0.00	0.00	0.00	0.00	0.00	0.00
Improvements	-3.00	-4.00	-5.00	-8.00	-10.00	-15.00
TOTAL	-6.62	-7.62	-8.62	-14.39	-19.15	-26.92

AAC INPUT TABLE ANALYSIS ZONE: TB

PER ACRE SUPPRESSION COST DOLLAR AMOUNTS NOT INFLATED

ACRE LIMIT	$ COST
0.3	27219
10.0	2586
100.0	444
200.0	198
300.0	107
1000.0	274
999999.0	16

APPENDIX G, cont.

EFT INPUT TABLE ANALYSIS ZONE: TB

FBD: CAL

ESCAPED FIRE TABLE

RL	1	2	3	4	5	6		
1	101	281	461	641	821	990		
	191	371	551	731	911	66000		
2	101	141	181	221	261	300		
	121	161	201	241	281	66000		
3	101	12083		24065		36047	48029	60011
	6092	18074		30056		42038	54020	66000
4	101	141	181	221	261	298		
	121	161	201	241	281	66000		
5	101	141	181	221	261	310		
	121	161	201	241	300	66000		
6	101	141	181	221	261	298		
	121	161	201	241	281	66000		
7	101	141	181	221	261	300		
	121	161	201	241	281	66000		
8	101	141	181	221	261	298		
	121	161	201	241	281	66000		
9	101	141	181	221	261	300		
	121	161	201	241	281	66000		
10	101	141	181	221	261	298		
	121	161	201	241	281	66000		
11	101	141	181	221	261	298		
	121	161	201	241	281	66000		

APPENDIX G, cont.

NVC INPUT TABLE ANALYSIS ZONE: TB

NVC PER ACRE INPUT TABLE DOLLAR AMOUNTS NOT INFLATED

TABLE: TB FOR LOCATIONS(S): 5 6 7 8 9 10

RESOURCE	1	2	3	4	5	6
Mature Timber	0.00	0.00	0.00	0.00	0.00	0.00
Immature Poles	0.00	0.00	0.00	0.00	0.00	0.00
Immature S/Sap	0.00	0.00	0.00	0.00	0.00	0.00
Forage	-0.86	-0.86	-	-0.86	-0.86	-0.86
Water	0.00	0.00	0.00	0.00	0.00	0.00
Soils	0.00	0.00	0.00	0.00	0.00	0.00
Fish Wm/Cd Wtr	0.00	0.00	0.00	0.00	0.00	0.00
Fish Anad Sprt	0.00	0.00	0.00	0.00	0.00	0.00
Fish Commercl	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife Big Gm	-3.59	-3.59	-	-10.77	-14.35	-17.94
Wildlife Other	0.00	0.00	0.00	0.00	0.00	0.00
Rec Disp/Dev	-0.09	-0.09	-	-0.27	-0.36	-0.45
Rec Wildernesss	0.00	0.00	0.00	0.00	0.00	0.00
Improvements	-5.00	-7.00	-10.00	-15.00	-15.00	-15.00
TOTAL	**-9.54**	**-11.54**	**-18.22**	**-26.90**	**-30.57**	**-34.25**

TABLE: TBC FOR REP LOCATION(S): 1 2 3 4

RESOURCE	1	2	3	4	5	6
Mature Timber	-14.07	-92.61	-378.67	-536.94	-591.57	-618.19
Immature Poles	-6.89	-13.51	-20.97	-25.21	-28.75	-31.07
Immature S/Sap	0.00	0.00	0.00	0.00	0.00	0.00
Forage	-4.24	-4.24	-4.24	-4.24	-4.24	-4.24
Water	0.00	0.00	0.00	0.00	0.00	0.00
Soils	0.00	0.00	0.00	0.00	0.00	0.00
Fish Wm/Cd Wtr	0.00	0.00	0.00	0.00	0.00	0.00
Fish Anad Sprt	0.00	0.00	0.00	0.00	0.00	0.00
Fish Commercl	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife Big Gm	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife Other	0.00	0.00	0.00	0.00	0.00	0.00
Rec Disp/Dev	0.00	0.00	0.00	0.00	0.00	0.00
Rec Wildernesss	0.00	0.00	0.00	0.00	0.00	0.00
Improvements	-0.27	-0.81	-2.04	-2.31	-2.31	-2.31
TOTAL	**-25.47**	**-111.17**	**-405.92**	**-568.70**	**-626.87**	**-655.81**

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